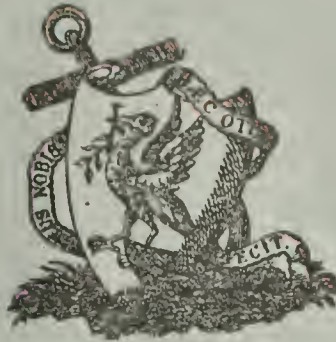


AC 4438(2) LIVERPOOL
PORT OF LIVERPOOL



ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

TO THE

PORT HEALTH AUTHORITY

FOR THE YEAR

1937

BY

W. M. FRAZER, M.D., M.Sc., D.P.H.,

Port Medical Officer of Health.

LIVERPOOL

G. TINLING & Co. LTD., PRINTING CONTRACTORS, 53, VICTORIA STREET

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1938

Staff of the Liverpool Port Health Authority, 1937.

Medical Officer of Health:

W. M. FRAZER, M.D., M.Sc., D.P.H., Barrister-at-Law.

Deputy Medical Officer of Health:

C. O. STALLYBRASS, M.D., B.S., M.R.C.S., L.R.C.P., D.P.H.

Senior Assistant Port Medical Officer:

E. R. PEIRCE, M.R.C.S., L.R.C.P., D.P.H., D.T.M.

Assistant Port Medical Officers:

H. A. RAEBURN, M.D., M.R.C.P., D.P.H. (to October 31st).

J. BATTERSBY, M.B., Ch.B., D.P.H. (from November 1st).

W. L. WEBB, M.B., Ch.B. (Part-Time).

Sanitary Staff.

Chief Inspector: E. CLARKE.

Assistant Chief Inspector: J. GRIFFITHS.

Four Sanitary Inspectors.

Eleven Rat Officers.

Food Inspection Staff.

Chief Food Inspector: J. H. SAVAGE.

Seven Food Inspectors.

Crew of Motor Launch "Moyles."

Captain: R. A. BARKER.

Seven members of crew.

Port Hospital, New Ferry.

Caretaker: R. HARRISON.

Clerical Staff.

Senior Clerk: J. F. WARD.

Three Clerks.

Clerk at Municipal Annexe: L. MANDIN.

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PORT HEALTH AUTHORITY

OF

LIVERPOOL.

REPORT FOR THE YEAR 1937.

BY THE
MEDICAL OFFICER OF HEALTH.

This is the 65th Annual Report on the work of the Liverpool Port Health Authority.

The report covers the work of the Authority during the year and includes an account of:—

(a) the measures adopted under the Port Sanitary Regulations, 1933;

(b) the measures taken to reduce the number of rats on dock quays and in ships, and to ascertain the existence of plague among any such rats;

(c) the measures taken in regard to the sanitation of vessels;

(d) the inspection of imported foodstuffs under the Public Health (Imported Food) Regulations, 1925, and the Public Health (Imported Food) Amendment Regulations, 1933;

(e) the medical inspection of aliens under the Aliens Order, 1920;

together with observations on various aspects of Port Health Administration.

Jurisdiction of the Port.

The limits of jurisdiction of the Port Health Authority are those of the Customs Port of Liverpool as defined in the Treasury Warrant of November 3rd, 1896, which are as follows:—

“ From the Red Stones in Hoylake on the Point of Wirral and
 “ continued up the river Mersey on the Cheshire shore thereof to
 “ the Western side of the entrance to the Manchester Ship Canal
 “ at Eastham, thence in an easterly direction across the said
 “ entrance and along the Cheshire shore of the river to Ince
 “ Ferry, the western termination on the Cheshire shore of the
 “ Port of Manchester, thence crossing the said river Mersey in a
 “ supposed straight line to Dungeon Point, being the western
 “ termination on the Lancashire shore of the said Port of
 “ Manchester, and continued along the coast of the County of
 “ Lancashire to the southern boundary of the Port of Preston,
 “ viz., an imaginary line drawn in a true north-north-west direc-
 “ tion from the inner north-west sea-mark on the beach at Formby
 “ Point, shown on the Admiralty chart of the survey of the West
 “ Coast of England from Formby Point to Kirkcudbright, published
 “ on the 23rd day of October, 1893. And the said Port shall include
 “ all islands, rivers, bays, channels, roads, bars, strands, harbours,
 “ havens, streams, and creeks (except the said Manchester Ship
 “ Canal) within the said limits contained, and shall extend sea-
 “ ward to a distance of three miles from low water-mark along
 “ the coast within the aforesaid limits.”

The contributing Riparian Authorities are the County Boroughs of Birkenhead, Bootle, Wallasey and Bebington.

Amount of Shipping Entering the Port during the Year 1937.

Class of Vessels.	Number.	Tonnage.	Number Inspected.		Number reported to be defective.	Number of vessels on which defects were remedied.	Number of vessels reported as having, or having had, during the voyage, infectious disease on board.
			By the Medical Officer.	By the Sanitary Inspector.			
SAILING FOREIGN—	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Steamers ...	...			4,114	579	543	
Motor ...	...		996	718	61	60	231
Sailing ...	6,643	12,117,916		4	—	—	
Fishing ...	...			—	—	—
TOTAL FOREIGN...	6,643	12,117,916	996	4,836	640	603	231
SAILING COASTWISE—							
Steamers ...	6,863	2,228,990	—	520	35	29	
Motor ...	1,763	912,690	—	118	2	1	
Sailing ...	33	4,681	—	4	—	—	5
Fishing ...	129	11,384	—	1	1	1	
TOTAL COASTWISE...	8,788	3,157,745	—	643	38	31	5
TOTAL FOREIGN AND COASTWISE ...	15,431	15,275,661	996	5,479	678	634	236

Figures in columns 1 and 2 supplied by H.M. Collector of Customs for this Port.

Character of Trade of Port.

The Port of Liverpool trades with all parts of the world, and almost every conceivable kind of cargo is carried by ships arriving in the Mersey.

Passenger Traffic during 1937.

No. of Passengers ...	1st Class.	2nd Class.	3rd Class.	Tourist Class.	Transmigrants.
Inwards ...	5,856	9,001	12,627	8,298	1,127
Outwards ...	13,092	11,459	12,917	9,949	2,506

Source of Water Supply.

The water used in the docks on the Liverpool side of the River Mersey is supplied by the Liverpool Corporation. Vessels in dock are supplied from hydrants from the same source, and vessels in docks on the Birkenhead side of the River Mersey are supplied with water by the Birkenhead Corporation and the Wallasey Corporation.

There are no water boats in use in the Port of Liverpool, all water being drawn from hydrants on the quayside.

Latrines on the Dock Estate.

The reconstruction of the latrines on the dock estate has been continued during the year by the Mersey Docks and Harbour Board.

In the Liverpool area of the docks there are 112 latrines; of these, 105 are of modern construction and quite satisfactory, one is at present under reconstruction, and six remain to be re-constructed.

In the Bootle area there are 58 latrines; 48 are of modern construction, four are at present being re-constructed, and six remain to be re-constructed.

PORT SANITARY REGULATIONS
1933.

Port Sanitary Regulations, 1933.

Arrangements for dealing with Declarations of Health.

(a) *Vessels from Infected Ports.* The Declarations of Health of vessels arriving from infected ports are obtained by the assistant port medical officers who board these vessels before docking.

(b) *Vessels from Non-Infected Ports.* The Declarations of Health from vessels arriving from non-infected ports are obtained by the customs officers who transmit them either by post or by hand to the Port Health Office.

Infectious Disease.

The measures adopted in Liverpool to prevent the importation of infectious disease from abroad are as follows :—

(1) The boarding by the assistant port medical officers of certain vessels on arrival in the river and before docking, viz. :—

(a) Vessels from certain parts of the world where dangerous infectious disease is known to exist.

(b) Vessels in which infectious disease exists at the time of arrival, or has occurred during the voyage.

(2) The visiting of vessels in dock by port health inspectors as soon as possible after docking.

(3) The trapping of rats in ships and on quays and their examination for signs of plague infection.

(4) Co-operation with the officers of H.M. Customs, who report to the Port Health Authority if they obtain information of sickness on board vessels visited by them.

Information of the arrival of vessels which, under the regulations of the Port Health Authority, must be boarded by the port medical officer before docking, is obtained by the co-operation of the pilotage service. All vessels, except very small craft, must be navigated into the port by either a licensed pilot or a master or mate holding a Liverpool pilot's certificate. Willing assistance has always been given by the pilots in carrying out the regulations.

All pilots are supplied by the Liverpool Port Health Authority with a book containing questions to be put to the master immediately on boarding, and also a list of infected ports where dangerous infectious disease is known to exist. These instructions, together with the list of infected ports, are amended from time to time.

A medical officer is available both day and night for the purpose of boarding, by means of the boarding launch "Moyles," incoming vessels from infected ports, or vessels which have cases of infectious disease on board at the time of arrival. During the year 800 vessels from infected ports were boarded in the river by the assistant port medical officers, and in addition 196 vessels were visited for the purpose of alien and other inspection. Of the vessels boarded in the river 116 were bound for Manchester. Vessels, whether from infected ports or not, arriving in Liverpool are visited as soon as possible after docking by a sanitary inspector, who enquires into the occurrence of any sickness during the voyage, and if necessary communicates with the port medical officer.

The deratisation, or alternatively the deratisation exemption certificate, is inspected, and if found to be in order the inspector proceeds to the examination of the sanitary condition of the vessel, pointing out any defects and suggesting the remedy to be adopted. It has been found that the shipping companies are always ready and willing to remedy any defects in their vessels which have been pointed out to them by the port health inspectors.

Motor Launch "Moyles."

The motor launch "Moyles" has continued to give satisfactory service during the year and except for the period of annual overhaul has been on continuous duty. The launch, which is able to develop a speed of over eleven knots, enables the medical officers to deal expeditiously with vessels arriving from infected ports.

Arrangements for disposal of cases of Infectious Disease and for observation or surveillance of contacts.

Cases of smallpox, plague, cholera or yellow fever are removed from the vessel before docking by the motor launch "Moyles," and conveyed to the Port Hospital, New Ferry, by water. Cases of

infectious disease other than the above are removed, usually after the vessel docks, to one of the city hospitals by means of the Health Committee's motor ambulances. Contacts with infectious cases living at addresses in the city, if not removed to hospital, are kept under observation by the city sanitary inspectors, and in the event of any contact proceeding to an address outside the city, the medical officer of health of the district concerned is advised.

Mooring Stations.

Outer Mooring Station. That part of the River Mersey known as the *Sloyne* and situated in Tranmere Bay has been designated the Liverpool Outer Mooring Station.

Inner Mooring Stations. Every discharging and loading berth within the docks has been designated an Inner Mooring Station.

Particulars of any standing exemptions from the provisions of Article 14.

The following notice in the form of a leaflet has been issued to all customs officers with regard to exemptions from the provisions of Article 14.

PORT OF LIVERPOOL HEALTH AUTHORITY.

PORT SANITARY REGULATIONS, 1933.

Article 14 (1).

Where a ship arrives in a district from a foreign port, and it appears to the customs officer from answers to questions in the **Declaration of Health** or from answers to inquiries made by him or otherwise,

- (a) that during the voyage (or where the voyage has lasted more than 6 weeks, during the last 6 weeks) there has been on the ship a death from illness suspected to be of an *infectious nature or of a case of such illness;

or

*Plague, Cholera, Yellow Fever, Smallpox or Typhus.

(b) that during the voyage the ship has called at a port or sea board included in the list of infected ports (see local list as supplied to customs officers and pilots);

or

(c) that during the voyage (or where the voyage has lasted more than 6 weeks, during the last 6 weeks) plague has occurred or been suspected among rats or mice on the ship, or sickness or death not attributable to poisoning or other measures for destruction has occurred among the rats or mice on the ship; he shall direct the ship to be taken to and detained at a mooring station unless the medical officer or other authorised person of the Sanitary Authority otherwise allows.

For the purpose of this article, standing **exemption** from detention is granted for the following diseases, in which case the medical officer should be immediately notified:—

Acute Polio-Encephalitis.	German Measles (Rubella).
Cerebro-Spinal Meningitis	Measles.
(Cerebro Spinal Fever).	Malaria.
Chickenpox.	Membranous Croup.
Continued Fever.	Pneumonia (either Primary
Diphtheria.	or Influenzal).
Dysentery.	Relapsing Fever.
Epidemic Infantile Paralysis	Scarlatina or Scarlet Fever.
(Acute Poliomyelitis).	Trench Fever.
Encephalitis Lethargica.	Tuberculosis (all forms).
Erysipelas.	Typhoid or Enteric Fever.

N.B.—Standing Exemption means that unless exceptional circumstances occur, vessels are to be cleared in the usual manner without the attendance of the boarding medical officer.

Restriction on Boarding or Leaving Ship (Article 16).

(a) *Vessels from Infected Ports, or Infected or Suspected Vessels.*—No person is allowed to board or leave any such vessel until it has been cleared by the assistant port medical officer and a certificate stating that “pratique may be issued” has been given.

(b) *Vessels from Non-Infected Ports*.—No person is allowed to board or leave any such vessel until the customs officer has satisfied himself that there are no reasons requiring the attendance of the port medical officer.

No difficulty has been experienced in carrying out the provisions of Article 16.

Premises and Waiting Rooms for Medical Inspection.

A room has been suitably equipped on the Prince's Landing Stage for use of the medical officers for medical examinations.

Arrangements for disinfection of Infected Quarters, Bedding, Clothing, etc.

Infected quarters are disinfected as soon as possible by means of liquid sulphur dioxide (sulphume) or by spraying with disinfectant by the staff of the Port Health Authority. The bedding, clothing, etc., are removed by vans to the Charters Street disinfecting station and there disinfected by steam

Arrangements for Cleansing of Persons.

This is carried out at either the City Hospital, Sparrow Hall, or the City Hospital North, Netherfield Road, to which the persons are conveyed by motor ambulance and where temporary accommodation is available.

The Port Isolation Hospital.

The Isolation Hospital was erected in 1877 at New Ferry, in the County of Cheshire, on land adjoining the River Mersey, and close to the quarantine station in the Sloyne anchorage ground. A slipway extends from the hospital to the water edge, and is available for the landing of patients from half-tide to high water.

The hospital was extended in 1901 and 1902 by the addition of a new pavilion, a suitable laundry and steam disinfector, also additional nurses' quarters.

The premises are chiefly used for the isolation of sea-borne cases of infectious disease, but from time to time cases have been received

on behalf of neighbouring authorities, under special agreement, when accommodation has been available. By the agreement with the Manchester Port Health Authority signed December 6th, 1933, arrangements are made by which suitable cases may be admitted from vessels lying in the Ship Canal. On the other hand, owing to the different types of infectious disease occurring in vessels coming into the Mersey, and the necessity of providing separate accommodation for men, women and children, it has been advantageous to admit cases of ordinary infection to the city hospitals where cases of a similar character are already accommodated.

Arrangements for Ambulance Transport.

The motor ambulances of the Liverpool Corporation are available for this purpose.

Supervision of Contacts.

All contacts remaining in the City and Port of Liverpool are inspected daily during the incubation period of the disease. In the event of contacts proceeding to other districts the medical officers of health of places of destination are informed and particulars concerning the history of the case are also forwarded.

Arrangements for detection and treatment of Venereal Disease among sailors.

Careful enquiry is made by the boarding medical officers and the port health inspectors into the history of cases that may have been reported during the voyage. This is usually obtained from responsible officers of the ship, e.g., captain, surgeon or chief engineer.

Leaflets, stating the times of attendance at the various venereal disease clinics in the city (attention being especially drawn to the Seamen's Dispensary), are distributed freely to masters of vessels; treatment at these clinics is obtained free of cost to the patient, and in all instances the masters of vessels are advised to arrange for the attendance of the patients at one of the clinics.

For further details relating to the treatment of Venereal Disease, see pp. 52-55.

Arrangements for bacteriological examination of rats.

The systematic examination of rats caught by the Port Health staff is carried out by the Liverpool City Bacteriologist.

During the year 3,697 rats and mice were examined for possible plague infection, 877 being from ships, and 2,820 from the sheds and quays at the docks. None were found to be infected.

INFECTIOUS DISEASE.

Infectious Diseases.

The number of cases of infectious disease *landed from vessels* arriving in the Port of Liverpool and those occurring in Liverpool bound ships which were disposed of *prior to the arrival* of the vessels at the port, together with the average for the preceding five years, are shown in the following tables:—

Cases of Infectious Sickness Landed from Vessels.

Diseases.	No. of Cases during 1937.		No. of Vessels concerned.	Average No. of Cases for previous 5 years.
	Passengers.	Crew.		
Plague	—	—	—	—
Cholera	—	—	—	—
Yellow Fever	—	—	—	—
Smallpox	—	—	—	0'2
Typhus Fever	—	—	—	—
Scarlet Fever	—	3	1	4
Enteric Fever and Paratyphoid Fever	—	15	4	4
Diphtheria	—	2	2	2
Measles and German Measles	3	4	7	9
Chickenpox	2	11	4	12
Tuberculosis	10	31	38	41
Pneumonia	1	12	11	9
Dysentery	11	6	7	1
Malaria	3	46	37	36
Cerebrospinal Fever	—	—	—	1
Erysipelas	—	—	—	1
Encephalitis Lethargica	—	1	1	—
	30	131	112	120

**Cases of Infectious Sickness occurring on Vessels during the Voyage
but Disposed of Prior to Arrival.**

Diseases.	No. of Cases during 1937.		No. of Vessels concerned.	Average No. of Cases for previous 5 years.
	Passengers.	Crew.		
Plague	—	—	—	—
Cholera	—	—	—	1
Yellow Fever (suspected) ...	1	—	1	—
Smallpox	—	2	2	3
Typhus Fever	—	—	—	—
Scarlet Fever	1	1	2	6
Enteric Fever and Paratyphoid Fever	2	9	11	8
Diphtheria	—	—	—	4
Measles and German Measles	18	6	17	27
Chickenpox	7	8	12	21
Tuberculosis	5	7	12	20
Pneumonia	3	23	25	26
Dysentery	2	8	8	8
Malaria	10	169	66	150
Cerebrospinal Fever	—	1	1	1
Erysipelas	—	2	2	1
	49	236	159	276

In all these diseases it is not only a fatal issue which is dreaded, but there are some diseases, e.g., malaria and venereal disease,* which, if left untreated will become chronic or incurable. The reasons why sailors are more exposed to such diseases than other men are plain enough. Their calling continually brings them into contact with countries where infective diseases are prevalent, often in epidemic form, and when ashore they mix with that part of the population which is frequently infected.

* There were 212 cases of venereal disease reported on board 147 vessels arriving in the port during the year. These were referred where circumstances required, for treatment at the Seamen's Dispensary. (See page 52).

Plague.

No case of human plague was landed at Liverpool during the year, and no plague-infected rats were discovered either in ships or on shore.

Smallpox.

No case of smallpox was landed at Liverpool during the year, but two vessels arrived having landed cases elsewhere.

s.s. "CASTALIA."

Information was received from the Ministry of Health on 8th October, 1937, that a case of smallpox had been landed from the s.s. "Castalia" at Suez three days previously.

On 16th October the names and destinations of the passengers who had disembarked from the vessel at Marseilles were obtained from the agents, and these were immediately forwarded to the medical officers of health concerned.

The vessel arrived in the Mersey at 7-30 a.m. on 20th October, and was boarded in the river by the senior assistant port health officer. The ship's surgeon reported that a native was landed at Suez on 5th October, suffering from semi-confluent smallpox.

DETAILS OF VOYAGE.

Arrived.				Departed.			
Bombay	...	8.9.1937		Bombay	...	14.9.1937	
Karachi	...	21.9.1937		Karachi	...	22.9.1937	
Bombay	...	24.9.1937		Bombay	...	24.9.1937	
Suez	...	5.10.1937		Suez	...	5.10.1937	
Port Said	...	5.10.1937		Port Said	...	6.10.1937	
Marseilles	...	11.10.1937		Marseilles	...	12.10.1937	
Gibraltar...	...	15.10.1937		Gibraltar	...	15.10.1937	
Liverpool	...	20.10.1937					

The patient joined the vessel at Bombay on 14th September, and was successfully vaccinated by the ship's surgeon on 22nd September. He reported sick on 26th September, having complained of feeling unwell

for the two days previously. The following day a rash first appeared on the face which spread to the extremities, palms of the hands, soles of the feet and limbs, with a few spots on the trunk. This rash rapidly became pustular, and semi-confluent on the face. The patient was isolated as soon as the rash was discovered and remained isolated until the vessel arrived at Suez, where he was landed to hospital.

The fore-castle and the hospital were washed down and sprayed with permanganate, and the bedding of the patient dumped overboard. All persons on board were vaccinated or re-vaccinated by the ship's surgeon.

On arrival in the Mersey the passengers and crew were medically examined, but no further cases or suspicious cases were discovered. The names and destinations of everyone on board were checked and forwarded to the medical officers of health concerned.

The vessel remained in Liverpool for three or four days and the crew were inspected each day by the senior assistant port medical officer.

s.s. "CYCLOPS."

The s.s. "Cyclops" arrived in the Mersey on 13th December, and was boarded before docking by the senior assistant port medical officer.

DETAILS OF VOYAGE.

Arrived.					Departed.
14.10.1937	Kobe	...	...	...	17.10.1937
27.10.1937	Singapore	...	...	...	2.11.1937
3.11.1937	Port Swettenham	...	...	...	3.11.1937
4.11.1937	Penang	...	...	...	5.11.1937
10.11.1937	Colombo	...	...	...	10.11.1937
18.11.1937	Kamaran	...	...	...	19.11.1937
21.11.1937	Jeddah	...	...	...	21.11.1937
23.11.1937	Suez	...	...	...	24.11.1937
24.11.1937	Port Said	...	...	...	25.11.1937
7.12.1937	Le Havre	...	...	...	10.12.1937
13.12.1937	Liverpool	...	...	...	—

The vessel carried pilgrims on the homeward voyage between Singapore and Jeddah, i.e., from November 2nd to November 21st.

The ship's surgeon reported that on November 12th he was called to see a female pilgrim who was suffering from smallpox. The patient had a pustular rash on the hands, face, feet, legs, and slightly on the trunk. She was isolated immediately with all contacts in a temporary hospital on deck, which was afterwards thrown overboard. The patient was landed at Jeddah on November 21st. The crew were all vaccinated by the ship's surgeon. The vessel was carrying pilgrims, who were reported to have been vaccinated before embarkation.

On arrival in the Mersey all persons on board were examined by the senior assistant port medical officer, but no further case or suspicious case was discovered. The crew were examined daily during the vessel's stay at Liverpool.

From the history of the case given by the ship's surgeon it would appear that it was one of genuine smallpox.

Smallpox Contacts.

A telegram was received from Greenock on 30th April to the effect that five seamen ex s.s. "Empress of Russia" had been in contact with a case of smallpox.

It was ascertained that the case referred to had been landed at Vancouver from the "Empress of Russia" on April 9th, and there were on board the "Duchess of York" (which arrived at Liverpool on 1st May) 13 passengers and 5 seamen from the "Empress of Russia." These were all examined by the assistant port medical officer and no evidence of infectious disease was discovered.

Although the incubation period had passed it was thought advisable to notify the medical officers of health for the districts concerned.

Suspected Yellow Fever.

One case of suspected yellow fever was reported in a Liverpool-bound vessel.

m.v. MARY KINGSLEY."

The m.v. "Mary Kingsley" arrived from Sapele via Bordeaux on December 11th, and was boarded in the Mersey by the assistant port medical officer, who examined all persons on board.

The captain reported that a first class passenger had embarked at Freetown on November 22nd, who was taken ill with suspected Yellow Fever on November 26th, and died the following day, being buried at sea on November 28th. There had been no other case of sickness on board.

DETAILS OF VOYAGE.

Departed.				Arrived.			
Port Harcourt	...	29.10.1937		Port Harcourt	...	25.10.1937	
Sapele	...	2.11.1937		Sapele	...	31.10.1937	
Warri	...	4.11.1937		Warri	...	3.11.1937	
Duala	...	6.11.1937		Duala	...	5.11.1937	
Kribi	...	7.11.1937		Kribi	...	7.11.1937	
Lagos	...	10.11.1937		Lagos	...	9.11.1937	
Keta	...	11.11.1937		Keta	...	11.11.1937	
Accra	...	12.11.1937		Accra	...	12.11.1937	
Winneba	...	12.11.1937		Winneba	...	12.11.1937	
Saltpond	...	13.11.1937		Saltpond	...	13.11.1937	
Cape Coast	...	13.11.1937		Cape Coast	...	13.11.1937	
Takoradi	...	15.11.1937		Takoradi	...	14.11.1937	
Port Bouet	...	17.11.1937		Port Bouet	...	16.11.1937	
Grand Bassam	...	17.11.1937		Grand Bassam	...	17.11.1937	
Grand Lahou	...	18.11.1937		Grand Lahou	...	18.11.1937	
Cape Palmas	...	19.11.1937		Cape Palmas	...	19.11.1937	
Grand Bassa	...	20.11.1937		Grand Bassa	...	20.11.1937	
Monrovia	...	20.11.1937		Monrovia	...	20.11.1937	
Sulima	...	21.11.1937		Sulima	...	21.11.1937	
Freetown	...	22.11.1937		Freetown	...	22.11.1937	
Bathurst	...	24.11.1937		Bathurst	...	24.11.1937	
Las Palmas	...	28.11.1937		Las Palmas	...	27.11.1937	
Bordeaux	...	8.12.1937		Bordeaux	...	3.12.1937	
				Liverpool	...	11.12.1937	

HISTORY OF CASE (TAKEN FROM SHIP'S LOG).

Patient was fevered; temperature, 100° F.; complained of cold; was constipated; temperature dropped to 99.2° at 5.0 p.m. on 26/11/37. The motions became black; urine was a dark red colour; there later appeared jaundice; temperature had risen again.

One specimen of blood showed no malaria parasites. Patient became delirious and died. The Port Authorities at Las Palmas would not allow the patient ashore while alive, or permit burial after death. He was buried at sea 28/11/37.

It was elicited that the patient, before this illness, had suffered from malaria and had been treating himself with atebirin.

From the history it would seem probable that the case was one of blackwater fever.

The vessel proceeded to Bordeaux where it was fumigated with hydrogen cyanide gas, and subsequently arrived at Liverpool, 11/12/37.

Anthrax.

The importation of large amounts of animal products, which are handled in transit to stores or manufactories, has associated with it the risk of human infection with the anthrax bacillus, causing a condition known as malignant pustule or cutaneous anthrax.

To emphasise the importance of early diagnosis and serum treatment in all cases of this disease, the Health Department has taken steps to make facilities for diagnosis available for the public. Posters have been printed on the subject and are affixed in suitable places. A pocket card has also been issued containing full information regarding the appearance and symptoms of cutaneous anthrax and advice on the action to be taken.

Arrangements are also made to admit all cases of anthrax or suspected anthrax direct to the City Hospital, Fazakerley. Five cases of anthrax came under treatment at the Fazakerley Hospital during 1937, one patient being a tannery employee from Runcorn and the others four dock workers from Liverpool. Three of the cases were severe, but fortunately all recovered. The use of neokharsivan as an addition to serum therapy undoubtedly has proved of very considerable advantage since it was instituted four years ago.

Cases of Anthrax treated at Liverpool City Hospital, Fazakerley, during 1937.

Series No. continued from 1936.	Age.	Sex.	Occupation.	Days ill on admission.	Site of Infection.	Clinical Notes.	Serum injected daily. Each dose expressed in c.c.s.	Complications.	Result.
65	28	M	Tannery hand	2	Forehead	Small focus	150 150	Severe serum rash	Recovery
66	37	M.	Lorry driver	4	Lobule of left ear	Considerable swelling of face and neck	250 250 250	None	Recovery
67	37	M.	Dock labourer	4	Front of left forearm.	Marked oedema of arm and hand.	250 250 250 250	Tardy response to serum.	Recovery
68	32	M.	Dock labourer	5	Side of neck, below jaw.	Swelling from eye to clavicle, dysphagia, dysphonia.	300 300 300 300	Severe serum rash	Recovery
69	37	M.	Dock labourer	4	Right side of neck, below ear.	Extensive swelling over neck and upper chest.	250 250	Severe serum rash made further serum injections undesirable, pro- gress somewhat slow.	Recovery

All serum was given intravenously with, at the same time, 0.3 gms. neokbarsivan on the first day of treatment, and 0.45 gms. neokbarsivan on the third day.

In order to eliminate as far as possible the handling of hides by dock labourers and others, the hide trades connected with this port have agreed not to open bales of China hides at the docks beyond what is necessary for sampling purposes.

The disinfection of imported dangerous wools is carried out at the Government Wool Disinfecting Station, Love Lane, and the Liverpool Port Health Authority assists by having samples of the untreated wools and those which have passed through the disinfecting process, examined by the City Bacteriologist; this helps to confirm and control the Duckering disinfecting process. During the year 382 samples of treated and untreated wool, hair, etc., were examined and 80 untreated samples showed positive evidence of anthrax infection. Those treated were all found to be free from anthrax infection.

The Ministry of Agriculture has drawn attention to the danger to farm animals in Great Britain in connection with the shipment in foreign ports of commodities containing the spores of anthrax. The disease is prevalent in animals in many parts of the world from which supplies of raw hides, hair, wool and feeding stuffs, e.g., cattle cake and its ingredients, are drawn. Infection may be conveyed to the farm by means of such animal substances from foreign countries, especially those places where inadequate or no precautions are taken.

Anthrax spores may be shaken from the above-mentioned animal products and may become mixed with foodstuffs or hold-sweepings, and thus infection may be indirectly conveyed to animals of the farm.

The spores of the anthrax bacillus have great resisting power, and may remain active for years unless measures are taken to destroy them.

The suggestion is made that special precautions should be adopted so that dried hides, wool, hair, etc., should not be carried, mixed with, or be placed on top of grain or feeding stuffs, and that the holds which have contained animal products of this nature should be thoroughly disinfected; further, that the sweepings of holds containing grain, etc., should not be mixed with other foodstuffs.

Chickenpox.

The s.s. "Clan Mackellar" from Indian Ports via London and Antwerp, arrived in the Mersey on the 18th January, 1937, and was dealt

with by the senior assistant port medical officer. Thirteen members of the native crew—lascar seamen and firemen—were found to be unwell on arrival; ten were suffering from chickenpox and the remaining three were cases of suspected chickenpox.

All thirteen cases were removed by city ambulance to the port hospital, New Ferry, and complete disinfection of the natives' quarters on board subsequently carried out.

In addition, cases of chickenpox occurred in 10 vessels bound either to or from Liverpool. Of these, four cases were landed at Liverpool to hospital; one had recovered on arrival, and 13 cases had been landed at other ports.

Dysentery.

The s.s. "Lancastria" arrived at Liverpool on 17th September, 1937, and the ship's surgeon reported that four passengers and one officer were suffering from dysentery; they were removed to hospital.

DETAILS OF VOYAGE.

Left.	Arrived.
Liverpool ... 4th Sept., 1937	Ponta Delgada (Azores) ... 8th Sept., 1937
Ponta Delgada (Azores) 8th Sept., 1937	Santa Cruz ... 10th Sept., 1937
Santa Cruz ... 10th Sept., 1937	Madeira ... 11th Sept., 1937
Madeira... 12th Sept., 1937	Casa Blanca ... 12th Sept. 1937
Casa Blanca ... 13th Sept., 1937	Liverpool ... 17th Sept., 1937

On 18th September three further members of the crew were removed to hospital. Three days later a passenger who was staying at a local hotel was removed to hospital, and also further members of the crew. All the patients made a satisfactory recovery except one passenger, who died on 4th October.

The following provisions were taken on board during the voyage:—

At Casa Blanca.—Live cray fish, vegetables, red mullet, bream, peaches, melons, potatoes, and pasteurised cows' milk.

At Madeira.—French beans, peas, lettuce, tomatoes, marrows, grapes, green figs, pineapples, plums and espada fish.

In addition, 100 tons of water were taken on board at Madeira and mixed with the water originally taken in at Liverpool. A sample of this mixed water was obtained and sent to the City Bacteriologist for examination. No organisms of the dysentery group were found, but the bacterial count was particularly high, at 37° C, 3610, and at 22° C. 9000. B.coli were absent in 100 c.c. It was only possible to obtain this sample on 7th October and the water would therefore have been stored for some time, and consequently had sterilized itself to some extent. It therefore seems probable that if this water had been used for drinking purposes during the voyage it might have had some connection with the dysentery outbreak. This mixed water was emptied out and the tanks cement washed.

No further cases occurred on the subsequent voyage.

Dysentery cases were also reported in two other Liverpool vessels; one of these died at sea, and two had recovered on arrival.

Typhoid Fever.

Two cases of typhoid fever were removed to hospital at Liverpool during the year, and nine cases were reported to have been landed elsewhere, from Liverpool-bound vessels.

The s.s. "Jonathan C. Holt" arrived in the Mersey on 24th September, 1937, from West Africa, and was boarded before docking by the senior assistant port medical officer. A member of the crew was removed to hospital for observation, and on 2nd October information was received that the case had been diagnosed as typhoid fever.

s.s. "GOTHIC STAR."

Information was received from the Blue Star Line, Ltd., on 26th November, 1937, to the effect that the s.s. "Gothic Star" was due at Liverpool on 30th November, and had on board one case of enteric fever requiring hospital treatment.

The vessel arrived on 30th November and was boarded in the river by the assistant port medical officer. The captain reported that the patient was an assistant engineer, who embarked 25th August and reported ill on 16th November with vague abdominal symptoms, pain,

tenderness, constipation, furred tongue, elevated temperature which rose gradually in a daily rise of the step-ladder type, mildly delirious, and confused. There were, of course, no facilities for bacteriological investigation. The doctor who boarded the vessel on the high seas reported rose spots on 21st November.

On 30th November the patient, who was acutely ill, was removed on stretcher by ambulance to Fazakerley Hospital.

The patient had established no contact with the shore for 23 days before onset. As there was only one case aboard it seemed unlikely that a spread by water, milk or food was responsible. Questions directed as to food taken on board did not elicit anything suspicious. Water had been taken in at South Shields, New Westminster, Portland, San Pedro (Los Angeles) and Colon. The water-tanks had last been cleansed on 25th August. A specimen of water taken from the tanks was taken for bacteriological examination, and one tin of the condensed milk used on board was also submitted.

All members of the crew were examined; no further case of illness on board was reported or found, nor had any member of the crew, to his knowledge, been in contact with a typhoid case or carrier. As all but nine of the crew were proceeding to Glasgow and London, inoculation with T.A.B. vaccine was offered, but only one man accepted.

As only 14 days had elapsed between the onset of the patient's illness and arrival at Liverpool, the captain was asked to report any further case of illness. The following history was obtained: On 30th September, 1937, on outward voyage, a case of appendicitis was landed at New Westminster, and operated upon. On 28th October, a seaman was landed at Los Angeles as a case of haemophilia; there was no previous history of bleeding, however.

When the ship's surgeon boarded the vessel on the 20th, he had the case isolated, allowed only two distressed British seamen to attend the case, instituted hand disinfection, separation and destruction of faeces, separation of utensils for food and receptacles for excreta.

As only one case was reported, and food, water and milk are not indicted, the probability is that both of the suspected appendicitis and haemophilia were enteric, and therefore the source of infection for the present case.

Paratyphoid Fever.

An outbreak of paratyphoid fever occurred in a Mersey training ship during September, October and November, 1937, and was of particular interest in that it occurred in a closed community and ran concurrently with a smaller outbreak of Sonne Dysentery.

The vessel, formerly a third-class cruiser, is about fifty years old, and used in training boys for the lower deck of the Royal Navy or Merchant Service. The ship's complement consisted of the commander, thirteen officers, and one hundred and twelve boys; in addition, the commander's wife and a maid live in the vessel. A local practitioner is responsible for the medical care of the boys.

On October 5th, 1937, the following facts were ascertained by the senior assistant port medical officer:—

(1) That on September 18th, two boys, suffering from pyrexia and malaise, were sent to Birkenhead General Hospital for observation, and subsequently diagnosed as Sonne dysentery; one of these returned to the vessel on September 29th, but was again taken ill and re-admitted to hospital on October 3rd, with paratyphoid fever.

(2) That on September 19th, twelve boys complained of diarrhoea. All recovered in twenty-four hours.

(3) That on October 1st, one boy, and on October 3rd, two boys, were removed to Birkenhead General Hospital for observation.

(4) That on October 4th, the visiting medical practitioner was informed by the bacteriological department of the Birkenhead General Hospital that the case admitted on October 1st, and the two cases admitted on October 3rd, were suffering from paratyphoid fever.

On October 5th, the medical officer of health for the City and Port of Liverpool received notification of a case of suspected paratyphoid fever in the training ship; the boy was examined by the senior assistant port medical officer and removed to Fazakerley Hospital. Bedding and effects of the patient were collected for disinfection, and the ship's hospital washed down and sprayed by an inspector of the Port Health Authority.

GENERAL INVESTIGATIONS.

The boys returned from summer leave on August 26th, 1937, and a number of new boys joined between that date and September 30th; included in the latter group, one (G.R.N.), who will be referred to again later in the report, joined on September 9th, reported sick on September 17th with indefinite symptoms, and remained in the ship's hospital until September 24th. The following day, September 25th, he went home on week-end leave and did not return to the vessel, his parents withdrawing him for health reasons. (This boy was subsequently visited at home and his parents persuaded to allow him to enter hospital.)

Except for the cases aforementioned, no other sickness was reported.

WATER AND FOOD SUPPLIES.

Drinking water is obtained from a hydrant on Rock Ferry Pier four times daily, conveyed to the vessel by water-boat, and pumped into storage tanks on the upper deck. The tanks are used exclusively for drinking water. River water is utilised for flushing latrines, urinals and lavatories; there is no possible contamination of the drinking water from this source.

Food supplies are kept in storerooms used specially for that purpose, and are the direct responsibility of the cook, who has the assistance of four boys in the galley. Milk in bulk is used only for cooking; for drinking purposes each boy receives a pint of pasteurised milk daily, in a sealed bottle.

LAVATORIES, ETC.

The lavatory accommodation was inspected; it is situated forward, and consisted of trough-closets without partitions. The contents of one large tank flushed the system four times a day; a trough-type urinal was similarly flushed. A separate pedestal water-closet and urinal are available for use at night, but locked during the day. The hospital has a separate water-closet.

As the night urinal opened on the sleeping quarters, representation was made that it be completely boarded up, and a new scuttle cut into the ship's side for ventilation; this was carried out at once.

PERSONAL HYGIENE.

The commander undertook that the crew would adhere strictly to the following instructions:—

(1) That the boys wash and scrub their hands with hot water and soap immediately after micturition or defaecation.

(2) That latrines and urinals be flushed every hour, and seats thoroughly scrubbed each day with disinfectant.

(3) that handling of food be restricted to the cook and galley staff (four boys); that no other boys be allowed in the galley.

(4) that uncooked vegetables, lettuces, etc., shall not be used.

(5) That no new boys shall join the vessel during the present term.

(6) That no boys be drafted to sea during the present term.

(7) All home week-end leave to be stopped.

(8) Football fixtures with other teams to be cancelled, but games ashore permitted among the boys themselves.

SEQUENCE OF CASES, AND MEASURES TAKEN AFTER OCTOBER 5TH, 1937.

October 7th. One of the galley boys reported sick with pain in the left upper abdomen. Temperature 100°. He was removed to Fazakerley Hospital for observation.

Blood was taken for Widal test from twenty boys who gave a history of pyrexia and/or diarrhoea since August 26th.

Specimens of faeces and urine from the cook and four galley boys were forwarded to the City Bacteriologist.

October 11. Two boys, with pyrexia, removed to Fazakerley Hospital for observation.

Blood for Widal test taken from the cook and galley staff.

October 12th. Eight boys, with pyrexia and/or diarrhoea, removed to Fazakerley Hospital for observation.

Arrangements were made for a daily "temperature parade" of all boys in the ship, and the results reported to the senior assistant port medical officer.

All febrile cases, irrespective of symptoms, were drafted to hospital for observation. From October 13th to October 20th, nineteen boys were segregated.

On October 18th, blood was taken from the six remaining new boys who joined the vessel on or after August 26th.

Arrangements were completed for the routine examination of faeces from all aboard, and six specimens were submitted daily to the City Bacteriologist.

On October 31st, three boys, and on November 6th, one, were removed to Fazakerley Hospital.

November 8th. Two boys were re-admitted to Fazakerley Hospital suffering from severe diarrhoea.

November 12th. A dysentery carrier was reported from the routine examination of stools, and removed to Fazakerley Hospital.

The question of preventive inoculation with T.A.B. was considered but rejected on account of the danger of masking future cases, and the absence of evidence as to the advantage of such inoculation during the course of an epidemic. It was, however, deemed expedient to obtain permission of parents and guardians for the inoculation of boys should the contingency arise. This was obtained in every case with the exception of those under the care of one voluntary society, which refused.

The total number of admissions to hospital for observation was forty-four (including three re-admissions), and the following results were obtained: --

Dysentery group	...	...	...	...	5
Widal + B. para. B. in Faeces and/or Urine...					7
Widal - B. para. B. in Faeces and/or Urine...					4
Widal + Faeces and Urine - ...	...	...	...		4
Widal - Faeces and Urine - ...	...	...	...		24
TOTAL	...	...	...	...	<u>44</u>

INVESTIGATION AND PROGRESS OF THE EPIDEMIC.

The investigation of this epidemic was complicated by the presence of both paratyphoid B. and Sonne dysentery; the fact that it was confined to a closed community where strict discipline could be maintained was of material assistance.

DYSENTERY CASES.

A scrutiny of the bacteriological reports (Table I) reveals the isolation of *B. dysenteriae* Sonne from one patient (S.C.) who had no previous symptoms. This boy joined the vessel on July 14th, 1937, and the dysentery epidemic commenced on September 18th, when two boys (J.V. and R.W.) were sent to Birkenhead General Hospital. Next day twelve boys complained of diarrhoea, which cleared up in twenty-four hours. These facts were first reported to the Port Health Authority on October 5th, following which a routine examination of faeces was instituted. From these examinations, a positive return (S.C.) was made on November 9th; the boy was removed to hospital, and since his segregation no further cases occurred.

In attacks of mild diarrhoea in two other cases the organism was isolated from the faeces; they were admitted to Fazakerley Hospital, one (W.G.) on September 11th, and the other (K.C.) on September 12th.

One case (J.V.) was of particular interest; he was discharged from Birkenhead General Hospital on September 28th and re-admitted on October 3rd with paratyphoid fever; he would therefore seem to have incubated paratyphoid during the course of his dysentery.

PARATYPHOID CASES.

The Liverpool port medical officer was first notified of paratyphoid fever in the training ship on October 5th, and investigations were proceeded with to find the source of infection.

Attention was directed to the water supply, food supply, galley staff, and the possibility of a carrier or missed case.

WATER SUPPLY.

The storage tanks on the fore-castle head and main deck were examined and samples taken by an assistant to the City Bacteriologist.

BACTERIOLOGICAL REPORT.

					Bacteria per c.c. at 37°.	Bacteria per c.c. at 22°.	B. coli absent in
Tank Main Deck	...	...	...	...	3	114	100 c.c.
Tank Forecastle...	...	...	...	...	5	143	100 c.c.

No organisms of the typhoid group were found in either specimen. After due investigation it was considered improbable that the water supply was the origin of the infection.

FOOD SUPPLY AND GALLEY STAFF.

Particular attention was directed to milk and uncooked vegetables, but food as the origin of the outbreak was considered unlikely.

Samples of blood, specimens of urine and faeces, were submitted to the City Bacteriologist from the cook and four galley boys: one of these boys (J.L.) was removed to Fazakerley Hospital on October 9th with paratyphoid fever; the blood Widal was positive and B. para. B. were isolated from the faeces and urine.

The results from the others were negative.

CARRIER OR MISSED CASE.

It has already been noted that the boys returned from leave on August 26th, and it was ascertained that none who returned gave a history of any illness during the vacation. As a number of new boys had joined the vessel between August 26th and September 30th, particular attention was directed to this group, and their individual medical histories investigated.

In this group was a boy (G.R.N.) who joined the vessel on September 9th; eight days later (September 17th) he was sent to the ship's hospital with indefinite symptoms, remaining there until September 24th. The

following day he returned home on week-end leave but did not return to the vessel, his parents withdrawing him for health reasons.

He was visited at home and ultimately his parents consented to his removal to hospital. He was admitted to Fazakerley Hospital on October 13th, and the next day B. para B. was isolated from the urine, blood and faeces being negative. On two later dates (*vide* Table I, G.R.N.) B. para B. were again isolated from the urine; both the blood and faeces still remained negative.

The boy was discharged from hospital on November 15th, and although at all times the blood Widal was negative, and B. para B. was not isolated from the faeces, the fact that the urine was positive on three separate occasions, and also that he was a new boy in the vessel, seems to indicate that he was the origin of the outbreak.

A urinary carrier with a consistently negative Widal is very rare, but a similar case has been reported by V. Glass and H. D. Wright; it would appear more than unlikely that the specimens of urine from this particular patient could be contaminated accidentally on three different dates.

On October 1st, i.e., fourteen days after this boy first entered the ship's hospital, a case of paratyphoid was removed to Birkenhead General Hospital.

Table II shows the incidence of the paratyphoid cases, including doubtful ones, and it will be observed that assuming G.R.N. to be the origin of the epidemic, a group of four cases occurred between October 1st and October 7th; another group of seven cases between October 11th and October 13th; one doubtful case on October 31st! and the last one on November 8th. This seems to indicate that the removal of the original source of infection, plus the rigid carrying out of the personal hygiene instructions, were successful in cutting short the outbreak.

In addition, twenty-four boys, who at the daily "temperature parade" had shown a rise, were sent to hospital for observation;

repeated examinations of blood, faeces, and urine of this last group were negative.

The type of infection was not severe; there were no deaths; one case was seriously ill but subsequently recovered; the remainder had an uneventful convalescence.

SUMMARY.

(1) This is the record of an outbreak of intestinal infection in a training ship, due to *B. paratyphosus* B. and *B. dysenteriae* Sonne.

(2) The first case of illness was a new boy, shown to be a urinary carrier of *B. paratyphosus* B.; although blood and faeces were negative, the organism was isolated from the urine on three separate occasions. A similar case is reported by V. Glass and H. D. Wright, *Journal of Pathology and Bacteriology*, Vol. XLV, No. 2, p. 438.

(3) Of a total complement of 128, eleven boys were definitely Paratyphoid, and four doubtful; two of the latter had positive Widal's but *B. paratyphosus* B. was not found; the blood Widal's in the others were negative and *B. paratyphosus* B. was isolated from only one specimen in each case.

(4) Mass inoculation with T.A.B. vaccine was considered but decided against. Preventive inoculation of new boys has been advised.

(5) Routine examination of faeces revealed a Sonne dysentery carrier as a possible cause of the dysentery outbreak. The organism was isolated in four other cases who showed dysenteric symptoms.

(6) Instructions in personal hygiene were issued and stressed early in the epidemic.

(7) The entire lavatory accommodation was reconstructed on modern lines before the end of Christmas leave.

(8) Bacteriological investigation of faeces from the personnel was carried out, and no case occurred after November 11th.

PARATYPHOID FEVER—Record of

TABLE I.

Name.	Hospital.		Faeces.	
	Admitted.	Discharged.	Date.	Result.
G.R.N. 	Fazakerley. 13.10.37	15.11.37	14.10.37 17.10.37 17.10.37 20.10.37 21.10.37 22.10.37	Negative Negative Negative Negative Negative Negative
R.W. 	Birkenhead General. 18.9.37	29.9.37	20.9.37 24.9.37	Occult Blood Sonne Dysentery +
J.V. 	Birkenhead General. 18.9.37 Readmitted, 3.10.37	29.9.37	20.9.37 20.9.37 Several examinations done. (No dates given).	Ooeult Blood Sonne Dysentery +
A.T. 	Birkenhead General. 1.10.37	23.11.37	6.10.37 11.10.37 18.10.37	B. para. B. + B. para. B. + Negative Examinations (No dates)
W.W. 	Birkenhead General. 3.10.37	23.11.37	6.10.37 11.10.37 19.10.37	Negative B. para. B. + Negative Examinations since (No dates)
A.L. 	Fazakerley. 5.10.37	4.12.37	6.10.37 8.10.37 20.10.37 28.10.37 30.10.37 3.11.37 6.11.37 10.11.37 13.11.37 17.11.37	B. para. B. + B. para. B. + B. para. B. + + B. para. B. + B. para. B. + B. para. B. + B. para. B. + Negative Negative Negative

cases in connection with the outbreak.

Urine.		BLOOD WIDAL.		Remarks.
Date.	Result.	Date.	Result.	
14.10.37 17.10.37 17.10.37 20.10.37 21.10.37 22.10.37 25.10.37 1.11.37 4.11.37	Para. B. + Negative Negative Para. B. + Negative Negative Para. B. + Negative Negative	13.10.37 15.11.37	Negative Negative	Joined Training Ship as a new boy 9.9. Sick Bay, 17.9-24.9. Indefinite symptoms. Returned home on 25.9 and did not return to ship. Admitted to Fazakerley Hospital, 13/10. Diagnosis : Paratyphoid B. Urinary carrier.
—	—	11.10.37	Negative	Diagnosis: Sonné Dysentery.
— All Negative.	—	19.9.37 4.10.37 8.10.37	Negative 1/25 Para. B. 1/2500 Para. B.	Vomiting, Diarrhoea, Cough. Diarrhoea and headache. Diagnosis : (a) Sonné Dysentery. (b) Paratyphoid B.
Urine Urine Urine since—Negative. (given).	Negative Negative Negative	4.10.37	1/200 Para. B.	Pain in left loin, and rigors. Pyrexia—No Diarrhoea. Diagnosis : Paratyphoid B.
6.10.37 11.10.37 19.10.37 —Negative (given).	Negative Negative Negative	4.10.37	B. para. B., 1/100	Pyrexia and similar symptoms. Diagnosis : Paratyphoid B.
6.10.37 8.10.37 20.10.37 28.10.37 30.10.37	Negative Negative Negative Negative Negative	14.10.37	B. para. B., 1/20480 B. typhosus (H), 1/640 B. typhosus (O), 1/20 B. para. B. (O), 1/40 Salmonella, 1/320	Sickness. Headache. Spleen palpable. ? 2 rose spots. General Malaise. Diagnosis : Paratyphoid B.

TABLE I—*Continued.*

Name.	Hospital.		Faeces.	
	Admitted.	Discharged.	Date.	Result.
J.L.	Fazakerley. 7.10.37	1.12.37	9.10.37 20.10.37 23.10.37 27.10.37 29.10.37 3.11.37 6.11.37 12.11.37 13.11.37	B. para. B. + B. para. B. + B. para. B. + B. para. B. + B. para. B. + Negative Negative — Negative Negative
N.E.B.	Fazakerley. 11.10.37	13.11.37	14.10.37 20.10.37 23.10.37	Negative Negative Negative
W.G.	Fazakerley. 11.10.37	13.11.37	12.10.37 18.10.37 21.10.37 25.10.37	Sonne Dysentery + Negative Negative Negative
K.C.	Fazakerley.	20.11.37	13.10.37 14.10.37 28.10.37 1.11.37 4.11.37	Negative Sonne Dysentery + Negative Negative Negative
G.H.C.	Fazakerley. 12.10.37	28.10.37	13.10.37 18.10.37 22.10.37	Negative Negative Negative
G.B.	Fazakerley. 12.10.37	28.10.37	13.10.37 18.10.37 22.10.37	Negative Negative Negative
G.H.W.	Fazakerley. 12.10.37	28.10.37	13.10.37 18.10.37 22.10.37	Negative Negative Negative
A.G.	Fazakerley. 12.10.37	28.10.37	13.10.37 18.10.37 22.10.37	Negative Negative Negative

Urine.		BLOOD WIDAL.		Remarks.
Date.	Result.	Date.	Result.	
9.10.37 20.10.37 23.10.37 27.10.37 29.10.37 3.11.37 6.11.37 12.11.37 13.11.37 17.11.37	Negative Negative B. para. B. + B. para. B. + Negative Negative B. para. B. + Negative Negative Negative Negative	9.10.37	B. para. B. (H), 1/1000 Salmonella, 1/1000	Pyrexia. Pain in left abdomen. Diagnosis : Paratyphoid B.
14.10.37 20.10.37 23.10.37 27.10.37 28.10.37 29.10.37	Negative Negative B. para. B. + Negative Negative Negative	13.10.37	Negative	Pyrexia. Diagnosis : Paratyphoid— Doubtful.
12.10.37 18.10.37 21.10.37	Negative Negative Negative	12.10.37	Negative	Pyrexia. Diagnosis : Sonne Dysentery.
13.10.37 28.10.37 1.11.37 4.11.37	Negative Negative Negative Negative	13.10.37	Negative	Pyrexia. Diagnosis : Sonne Dysentery.
13.10.37 18.10.37 22.10.37	Negative Negative Negative	13.10.37	Negative	Pyrexia. Diagnosis : Nil.
13.10.37 18.10.37 22.10.37	Negative Negative Negative	13.10.37	Negative	Pyrexia. Diagnosis : Nil.
13.10.37 18.10.37 22.10.37	Negative Negative Negative	13.10.37	Negative	Pyrexia. Diagnosis : Nil.
13.10.37 18.10.37 22.10.37	Negative Negative Negative	13.10.37	Negative	Pyrexia. Diagnosis : Nil.

TABLE 1—*Continued.*

Name.	Hospital.		Faccs.	
	Admitted.	Discharged.	Date.	Result.
D.E.D. 	Fazakerley. 12.10.37 Readmitted, 8.11.37	28.10.37	13.10.37	Negative
			18.10.37	Negative
			22.10.37	Negative
			9.11.37	Negative
			16.11.37	B. para. B. +
			18.11.37	Negative
			25.11.37	Negative
			26.11.37	B. para. B. +
			9.12.37	Negative
L.B. 	Fazakerley. 12.10.37	—	10.12.37	Negative
			13.10.37	B. para. B. +
			28.10.37	B. para. B. +
			8.11.37	B. para. B. +
			18.11.37	Negative
A.C. 	Fazakerley. 12.10.37	27.11.37	25.11.37	Negative
			13.10.37	B. para. B. +
			28.10.37	B. para. B. +
			8.11.37	Negative
			12.11.37	Negative
W.A.C. 	Fazakerley. 13.10.37	28.10.37	17.11.37	Negative
			14.10.37	Negative
			19.10.37	Negative
			21.10.37	Negative
G.H.G. 	Fazakerley. 13.10.37	28.10.37	14.10.37	Negative
			19.10.37	Negative
S.R.S. 	Fazakerley. 13.10.37	2.11.37	14.10.37	Negative
			19.10.37	Negative
	Readmitted, 8.11.37	9.12.37	—	—
			9.11.37	Negative
			16.11.37	Negative
J.S. 	Fazakerley. 13.10.37	27.11.37	18.11.37	Negative
			12.10.37	Negative
			14.10.37	Negative
			8.11.37	Negative
J.G.L. 	Fazakerley. 13.10.37	—	12.11.37	Negative
			14.10.37	B. para. B. +
			28.10.37	B. para. B. +
			8.11.37	Negative
			12.11.37	Negative
J.G.L. 	Fazakerley. 13.10.37	—	17.11.37	Negative
			14.10.37	B. para. B. +
			28.10.37	B. para. B. +
			8.11.37	Negative
			12.11.37	Negative

Urine.		BLOOD WIDAL.		Remarks.
Date.	Result.	Date.	Result.	
13.10.37	Negative	7.10.37	Negative	Diarrhoea started 6/11, and continued to 8/11.
18.10.37	Negative	13.10.37	Negative	
22.10.37	Negative			
9.11.37	Negative			
16.11.37	Negative			
18.11.37	Negative			
—	—			
26.11.37	Negative	24.11.37	Negative	Diagnosis : Paratyphoid B.
13.10.37	Negative	13.10.37	B. para. B. (H), 1/2560	Pyrexia.
28.10.37	Negative		B. para. B. (O), 1/40	
8.11.37	Negative		Salmonella, 1/320	Diagnosis : Paratyphoid B.
18.11.37	Negative			
—	—			
13.10.37	Negative	11.10.37	B. para. B., 1/320	Pyrexia.
28.10.37	Negative		Salmonella, 1/2500.	
8.11.37	Negative			Diagnosis : Paratyphoid B.
12.11.37	Negative			
17.11.37	Negative			
14.10.37	Negative	7.10.37	Negative	Pyrexia.
19.10.37	Negative	14.10.37	Negative	
21.10.37	Negative			Diagnosis : Nil.
14.10.37	Negative	14.10.37	Negative	Pyrexia.
19.10.37	Negative			
21.10.37	Negative			Diagnosis : Nil.
14.10.37	Negative	14.10.37	Negative	Pyrexia.
19.10.37	B. para. B. +			
21.10.37	Negative			Diarrhoea, 6/11 to 8/11. Sent back to hospital.
25.10.37	Negative			
26.10.37	Negative			Diagnosis : Paratyphoid—Doubtful.
9.11.37	Negative			
16.11.37	Negative			
18.11.37	Negative			
12.10.37	Negative	7.10.37	B. para. B. (O), 1/80+	Pyrexia.
14.10.37	Negative		Salmonella, 1/160+	
8.11.37	Negative	27.10.37	B. para. B. (H), 1/160	Diagnosis : Paratyphoid B.
12.11.37	Negative		B. para. B. (O), 1/160	
			Salmonella, 1/40	
14.10.37	Negative	7.10.37	Doubtful Report	Pyrexia.
28.10.37	Negative	11.10.37	Salmonella + 1/160	
8.11.37	Negative			Diagnosis : Paratyphoid B.
12.11.37	Negative			
17.11.37	Negative			

TABLE I—*Continued.*

Name.	HOSPITAL.		FAECES.	
	Admitted.	Discharged.	Date.	Result.
R.M.H. 	Fazakerley. 13.10.37	27.11.37	12.10.37 14.10.37 8.11.37 15.11.37 17.11.37	Negative Negative Negative Negative Negative
B.D. 	Fazakerley. 14.10.37	28.10.37	15.10.37 26.10.37	Negative Negative
W.L.J. 	Fazakerley. 15.10.37	28.10.37	16.10.37 26.10.37	Negative Negative
A.E.H.C. 	Fazakerley. 15.10.37	28.10.37	16.10.37 26.10.37	Negative Negative
C.S.L. 	Fazakerley. 16.10.37	28.10.37	18.10.37 25.10.37	Negative Negative
D.W.E. 	Fazakerley. 16.10.37	2.11.37	18.10.37 25.10.37	Negative Negative
J.B. 	Fazakerley. 18.10.37	2.11.37	19.10.37 25.10.37	Negative Negative
J.T. 	Fazakerley. 18.10.37	28.10.37	19.10.37 25.10.37	Negative Negative
E.J.S. 	Fazakerley. 19.10.37	2.11.37	20.10.37 25.10.37	Negative Negative
R.E.G. 	Fazakerley. 19.10.37	2.11.37	20.10.37 25.10.37	Negative Negative
A.E.S. 	Fazakerley. 19.10.37	2.11.37	20.10.37 27.10.37	Negative Negative
B.J.N. 	Fazakerley. 19.10.37	2.11.37	20.10.37 27.10.37	Negative Negative
C.S.S. 	Fazakerley. 20.10.37	5.11.37	21.10.37 25.10.37	Negative Negative

URINE.		BLOOD WIDAL.		Remarks.
Date.	Result.	Date.	Result.	
12.10.37 14.10.37 8.11.37 15.11.37 17.11.37	Negative Negative Negative Negative Negative	7.10.37 27.10.37	B. para. B. Type, 1/80 B. para. B. (H), 1/80	Pyrexia. Diagnosis : Paratyphoid—Doubtful.
15.10.37 21.10.37 26.10.37	Negative Negative Negative	7.10.37	Negative	Pyrexia. For observation. Diagnosis : Nil.
16.10.37 21.10.37 26.10.37	Negative Negative Negative	18.10.37	Negative	Pyrexia. Diagnosis : Nil.
16.10.37 21.10.37 26.10.37	Negative Negative Negative	18.10.37	Negative	Pyrexia. Diagnosis : Nil.
18.10.37 25.10.37	Negative Negative	18.10.37	Negative	Pyrexia. Diagnosis : Nil.
18.10.37 25.10.37	Negative Negative	7.10.37	Negative	Pyrexia. Diagnosis : Nil.
19.10.37 25.10.37	Negative Negative	7.10.37	Negative	Pyrexia. Diagnosis : Nil.
19.10.37 25.10.37	Negative Negative	7.10.37	Negative	Pyrexia. Diagnosis : Nil.
20.10.37 25.10.37	Negative Negative	20.10.37	Negative	Pyrexia. For observation. Diagnosis—Nil.
20.10.37 25.10.37	Negative Negative	20.10.37	Negative	Pyrexia. For observation. Diagnosis : Nil.
20.10.37 27.10.37	Negative Negative	20.10.37	Negative	Pyrexia. For observation. Diagnosis : Nil.
20.10.37 27.10.37	Negative Negative	20.10.37	Negative	Pyrexia. For observation. Diagnosis : Nil.
25.10.37	— Negative	22.10.37	Negative	Pyrexia. For observation. Diagnosis : Nil.

TABLE I—*Continued.*

Name.	HOSPITAL.		FÆCES.	
	Admitted.	Discharged.	Date.	Result.
D.B.C.	Fazakerley. 31.10.37	9.12.37	22.10.37 1.11.37 4.11.37 16.11.37	Negative Negative Negative Negative
C.E.W.	Fazakerley. 31.10.37	—	1.11.37 15.11.37 17.11.37 23.11.37	Negative Negative Negative Negative
E.W.B.	Fazakerley. 31.10.37	27.11.37	21.10.37 1.11.37 4.11.37 16.11.37 23.11.37	Negative Negative Negative Negative Negative
C.J.S.	Fazakerley. 5.11.37	27.11.37	22.10.37 18.11.37 15.11.37 17.11.37	Negative Negative Negative Negative
J.A.V.	Fazakerley. 6.11.37	—	29.10.37 6.11.37 8.11.37 15.11.37 17.11.37	Negative Negative Negative Negative Negative
S.C.	Fazakerley. 12.11.37	—	9.11.37 15.11.37 29.11.37 3.12.37 6.12.37	B. Dysentery Sonne+ B. Dysentery Sonne+ Negative Negative Negative

TABLE

PARATYPHOID CASES,

Sept. 17th
Oct. 1st (T.A.), Oct. 3rd (J.V.), Oct. 3rd
Oct. 11th (N.E.B.), Oct. 12th (L.B.), Oct. 12th (A.C.), Oct. 13th
?
Oct. 31st
Nov. 11th

URINE.		BLOOD WIDAL.		Remarks.
Date.	Result.	Date.	Result.	
—	—	7.10.37	Negative	Pyrexia. For observation.
1.11.37	Negative	1.11.37	Negative	
4.11.37	Negative			
16.11.37	Negative	24.11.37	Negative	Diagnosis : Nil.
1.11.37	Negative	18.10.37	Negative	Pyrexia. For observation.
15.11.37	Negative	1.11.37	B. para. B. (H). 1/160	
17.11.37	Negative		B. para. B. (O). 1/20	
		15.11.37	B. para. B. (H). 1/80	
			B. para. B. (O). 1/20	
			Salmonella. 1/20	Diagnosis : Paratyphoid : Doubtful.
—	—	1.11.37	Negative	Pyrexia. For observation.
1.11.37	Negative			
4.11.37	Negative			
16.11.37	Negative			Diagnosis : Nil.
—	—			
—	—	8.11.37	Negative	Pyrexia. For observation.
8.11.37	Negative			
15.11.37	Negative			
17.11.37	Negative			Diagnosis : Nil.
—	—			
—	—			Pyrexia. For observation.
8.11.37	Negative	8.11.37	Negative	
15.11.37	Negative			
17.11.37	Negative			Diagnosis : Nil.
15.11.37	Negative	15.11.37	Negative	Dysentery carrier.
—	—			Joined vessel, 14.7.
29.11.37	Negative			Leave, 1.8—20.8.
—	—			No history of any illness.
—	—			Diagnosis :
				Sonne Dysentery Carrier.

II.

INCLUDING DOUBTFUL CASES.

(G.R.N.)

(W.W.), Oct. 5th (A.L.), Oct. 7th (J.L.)

(S.R.S.), Oct. 13th (J.S.), Oct. 13th (J.G.L.), Oct. 13th (R.M.H.)

?

(C.E.W.)

?

(D.E.D.)

Suspected Paratyphoid B.

Two cases of suspected paratyphoid were landed elsewhere from Liverpool-bound vessels.

Influenza.

The s.s. "Samaria" left New York on 26th December, 1936, called at Boston, U.S.A., and Cobh, Irish Free State, on 4th January, 1937, and arrived in Liverpool on 5th January, 1937.

The ship's surgeon reported 42 cases of influenza; these were mild, and recovered within four days. Eleven, however, were sufficiently severe to be admitted to the ship's hospital.

Clinically, all the cases were similar in type. Patients complained of coryza: this was soon followed by pharyngitis, laryngitis, general malaise with headache, and a rise of temperature. Some cases complained of a burning pain in the chest; in another case there were symptoms of otitis media; two complained of neuralgia; there was mild headache in most cases.

Influenza was not unduly prominent in New York when the ship sailed.

The chronological sequence was as follows:—

26.12.1936	Sailed from New York.
27.12.1936	
28.12.1936	8 cases.
29.12.1936	11 cases.
30.12.1936	6 cases.
31.12.1936	2 cases.
1.1.1937	6 cases.
2.1.1937	7 cases.
3.1.1937	
4.1.1937	2 cases.

All these cases occurred amongst the crew. On 28th December (first day), there were 7 cases among the deck hands and 1 among the stokers. On 30th December (third day), cases occurred among the stewards.

Throughout the voyage cases were confined to the stewards and deck hands, including officers. With the exception of a junior engineer and another stoker (on the 1st January) the engine room staff was not affected.

No passengers were attacked. The only suggestion of trouble amongst the passengers was a slight febrile cold (temperature 101°) in a girl aged 7; she had recovered in 24 hours.

The weather during the early part of the voyage was stormy, necessitating the scuttles being closed.

POINTS OF INTEREST.

1. The epidemic was confined to the crew. It is peculiar that the engine-room staff remained more or less free.

2. The definite clinical type.

3. Cases occurred in two waves—presumably secondary infections.

Suspected Food Poisoning.

The s.s. "W. Hendrik" arrived in the Mersey from Buenos Aires, via Dakar, on September 12th, and was boarded before docking by the assistant port medical officer.

Details of voyage:—

Aug. 3rd, 1937	...	Left Rosario.
„ 5th, 1937	...	At San Nicolas.
„ 7th, 1937	...	At Buenos Aires.
„ 9th, 1937	...	Left Buenos Aires.
„ 29th, 1937	...	Arrived and left Dakar.
Sept. 12th, 1937	...	Arrived Liverpool.

No sickness was reported during the voyage, but the captain and the wireless operator complained of slight colds which had started the day before arrival at Liverpool.

September 12th. The third officer complained of slight abdominal pains and vomiting, and together with the captain and wireless operator, was removed to Tranmere Municipal Hospital on September 13th, 1937.

September 14th. The vessel was visited by a port health inspector who reported the above cases to the assistant port medical officer; the latter, in company with the deputy chief sanitary inspector, visited the vessel and obtained the following history from the chief officer:—

The illness was confined to the deck officers who messed in a separate room; suspicion fell upon some tinned baddock. This was served to the deck officers on September 7th, but not to the engineer officers. The captain, wireless operator and third officer all ate varying amounts.

but the first and second mates did not eat any. The first and second mates and the engineer officers have so far shown no signs nor symptoms of illness.

Samples of tinned haddock, tinned salmon, and tinned rabbit were taken and forwarded to the City Bacteriologist for examination. The results were negative, except that some haemolytic streptococci were found in the tinned haddock.

Malaria.

During the year, 50 new cases of malarial fever were notified, which were either landed in Liverpool or had recovered abroad, in 23 vessels. The names and addresses of the patients, with particulars of the treatment given, together with the movements of the vessels, were forwarded to the Ministry of Health.

Psittacosis.

The Parrots (Prohibition of Imports) Regulations, 1930, are still in force, and during the year 1937 the number of orders issued was 42.

The Health Authority enforce the Regulations, Sections 4 and 5 which state as follows :—

Section 4. A person shall not import any *parrot into England or Wales whether for sale or otherwise :

Provided that nothing in these regulations shall be deemed to prohibit the importation of any parrot which is proved to the satisfaction of the Medical Officer of Health to be required for purposes of medical or veterinary research, or which is consigned to the Zoological Society of London or to a person for the time being specially authorised by the Minister (Health) to import parrots otherwise than for sale.

Section 5. The master of every ship approaching any port shall, if he has reason to believe that a parrot is on board, bring these regulations to the notice of the person having the custody or control of the parrot, and shall immediately on the arrival of the ship notify the proper officer of Customs and Excise accordingly.

* "Parrot" means a bird of the order Psittaciformes, and includes any of the birds commonly called parrots, parrakeets, lovebirds, macaws, cockatoos, conures, caiques, lorries and lorikeets.

VENEREAL DISEASES.

Venereal Diseases.

A very important subject which has close association with seafaring life is the prevalence of venereal diseases. As a result of the Report of the Royal Commission, the Public Health (Venereal Diseases) Regulations were passed in 1916, which came into force in Liverpool in 1917. The object of the regulations was to ensure that the treatment of affected persons should be carried out so as to effect their cure and to prevent the further spread of infection. The various county and borough councils were required to prepare schemes for free treatment at or in hospitals or institutions of persons suffering from these diseases.

The scheme has had an extensive trial and very good results may be claimed for it. The free facilities and supply of special drugs have been fully taken advantage of by many classes of patients and their medical advisers. The accompanying graph facing page 54 shows the total number of new cases of the two principal venereal diseases year by year. The Central Clinic at Mill Road Infirmary is now well established, the total attendances of all patients during the year being 32,092, an increase of 1,570 over the previous year. There are two clinics daily for both males and females. Wards for the in-patient treatment of patients who require it are situated in the same building.

The clinics operated by the Corporation during 1937 were as follows:

Seamen's Dispensary (Males only).

Mill Road Infirmary Special Clinic (Males and Females).

Royal Infirmary (Males and Females).

Edge Lane Medical Home (Females only)

The following summarises the work of the treatment centres for the year 1937:—

	Seamen's Dispensary Males only.	†Royal Infirmary.		†Mill Road Infirmary Spl. Clinic.		†Edge Lane Medical Home. Females only.	TOTAL Males and Females.
		Males	Females	Males	Females		
New Cases	2,258	715	226	612	452	89	4,352
Old and new patients							
Total attendances	55,131	38,088	8,717	15,158	16,934	—	134,028
In-patient Days	—	68	—	9,692	11,303	6,656	27,719

†Beds for In-patients are reserved at these Institutions.

Services rendered at the Venereal Diseases Treatment Centres during the Year 1937.

To face page 52.

	Syphilis.		Soft Chancere.		Gonorrhoea.		Conditions other than Venereal.		Totals.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Totals.
1. Number of cases on 1st January under treatment or observation ...	909	378	50	...	946	252	22	8	1,927	638	2,565
2. Number of cases removed from the register during any previous year which returned during the year under report for treatment or observation of the same infection ...	182	34	18	...	166	14	...	...	386	48	414
3. Number of cases dealt with for the first time during the year under report (exclusive of cases under Item 4) suffering from:—											
Syphilis, primary ...	97	9	...	...	...	...	...	...	97	9	106
" secondary ...	34	16	...	...	...	...	...	...	34	16	50
" latent in 1st year of infection ...	41	15	...	...	...	...	...	...	41	15	56
" all later stages ...	220	102	...	...	...	...	...	...	220	102	322
" congenital ...	35	37	...	...	...	...	...	...	35	37	72
Soft Chancere ...	...	...	115	1	...	...	...	...	115	1	116
Gonorrhoea, 1st year of infection ...	...	...	...	...	1,428	115	...	...	1,428	115	1,543
" later ...	...	...	...	...	64	23	...	...	64	23	87
Conditions other than venereal ...	...	...	...	...	...	...	1,551	360	1,551	360	1,911
4. Number of cases dealt with for the first time during the year under report known to have received treatment for the same infection, or to have been under observation, at other Centres ...	158	15	26	...	266	21	...	...	450	36	486
5. Number of cases discharged after completion of treatment and final tests of cure or after diagnosis as non-venereal...	1,676	606	209	1	2,870	425	1,573	368	6,328	1,400	7,728
6. Number of cases which ceased to attend before completion of treatment and were, on first attendance, suffering from:—	57	7	46	1	748	64	1,553	364	2,404	436	2,840
Syphilis, primary ...	52	8	...	...	...	...	...	...	52	8	60
" secondary ...	16	14	...	...	...	...	...	...	16	14	30
" latent in 1st year of infection ...	6	9	...	...	...	...	...	...	6	9	15
" all later stages ...	145	82	...	...	...	...	...	...	145	82	227
" congenital ...	29	37	...	...	...	...	...	...	29	37	66
Soft Chancere ...	...	...	19	...	...	...	...	...	19	...	19
Gonorrhoea, 1st year of infection ...	...	...	...	...	462	70	...	...	462	70	532
" later ...	...	...	...	...	34	12	...	...	34	12	46
7. Number of cases which ceased to attend after completion of treatment but before final tests of cure ...	23	...	18	...	141	11	...	...	182	11	193
8. Number of cases transferred to other centres or to institutions, or to care of private practitioners ...	442	24	89	...	616	30	...	...	1,147	54	1,201
9. Number of cases remaining under treatment or observation on 31st December ...	906	425	37	...	869	238	20	4	1,832	667	2,499
	1,676	606	209	1	2,870	425	1,573	368	6,328	1,400	7,728
10. Number of cases in the following stages of syphilis (included in Item 6) which failed to complete one course of treatment:—											
Syphilis, primary ...	12	2	...	...	...	...	...	...	12	2	14
" secondary ...	4	2	...	...	...	...	...	...	4	2	6
" latent in 1st year of infection ...	2	5	...	...	...	...	...	...	2	5	7
" all later stages ...	35	28	...	...	...	...	...	...	35	28	63
" congenital ...	13	9	...	...	...	...	...	...	13	9	22
11. Number of attendances:—											
(a) for individual attention of the medical officer(s) ...	14,354	9,149	954	10	29,974	4,421	3,036	610	48,318	14,190	62,508
(b) for intermediate treatment, e.g., irrigation, dressing ...	524	19	839	34	58,674	11,375	22	33	60,059	11,461	71,520
TOTAL ATTENDANCES ...	14,878	9,168	1,793	44	88,648	15,796	3,058	643	108,377	25,651	134,028
12. In-patients:—											
(a) Total number of persons admitted for treatment during the year ...	186	141	18	...	113	95	19	44	336	280	616
(b) Aggregate number of "in-patient days" of treatment given ...	5,994	7,270	421	...	3,149	2,861	196	1,172	9,760	11,303	21,063
	Under 1 year.		1 and under 5 years.		5 and under 15 years.		15 years and over.		Totals.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
13. Number of cases of congenital syphilis in Item 3 above classified according to age periods ...	2	5	...	1	9	4	24	27	35	37	
	Arsenical.						Mercury.		Bismuth.		
	Approved Arsenobenzene Compounds.			Others.							
14. Total number of injections given (out-patients and in-patients) ...	8,312			2,741			1,403		11,375		
	Microscopical		Cultural for Gonorrhoea		Serum		Cerebro-spinal fluid.		Others for diagnosis of Venereal Disease.		
	for Syphilis.	for Gonorrhoea.			for Syphilis.	for Gonorrhoea.					
15. Pathological Work:—											
(a) Number of specimens examined at, and by the medical officer of, the Treatment centre ...	367	4,179	—		—		—		—		
(b) Number of specimens from patients attending at the Treatment Centre sent for examination to an approved laboratory ...	90	7,655	7		8,941		359		488		

The Seamen's Dispensary, Mill Road Special Clinic and the Royal Infirmary are open all day for treatment of these diseases for males, while Mill Road Special Clinic is also open afternoon and evening for females. At the Royal Infirmary treatment for females is provided each day at hours convenient to the greatest number of patients.

Laboratory services for the diagnosis and control of treatment are provided at the City Laboratories, the Thompson Yates Laboratory of the University and the Mill Road Infirmary Laboratory.

At the city laboratory, Wasserman reaction tests are done three times weekly, rapid diagnosis obviating delay in treatment.

Wherever possible an effort is made to ascertain the person responsible for the patient's infection, with a view to bringing him or her under observation and treatment.

Experience has shown that it is the close personal touch with the patient and the interest in his case which helps to stimulate the sufferer to continue treatment, but the absence of any feeling of ill health or discomfort may cause the development of a sense of indifference and the desire to avoid the irksome routine of attendance.

Many patients who are suffering from gonorrhœa unfortunately do not report for treatment until a few weeks have elapsed and the disease has extended considerably from the original point of infection, in many cases having complications, and involving important organs. This neglect or inability to seek medical advice may be attributed to the nature of employment or absence on ship at sea, but those who reside locally frequently can and do come for treatment at an earlier stage; the disease, however, is well established in the majority before they present themselves for treatment.

Seamen's Dispensary.

The primary function of this clinic is to provide free and expert treatment for seamen of all nations to provide a laboratory service for rapid diagnosis, and to act in an advisory capacity to medical officers of ships, ships' captains, and foreign consulates. Although the

majority of the patients are seamen, other classes of occupation are also dealt with.

The staff consists of four part-time medical officers and four highly trained orderlies.

Excellent results have been recorded both in the treatment of gonorrhœa and of syphilis, and special schemes of treatment particularly suited to the needs of the seafaring population have proved efficient.

During the year under review, 4,014 cases have been advised and treated, of whom 2,577 reported for the first time. Of these, 986 were found not to be suffering from venereal disease.

The classification of the cases dealt with at the Seamen's Dispensary for the first time during the year, and also for the five previous years, was as under :—

	1932	1933	1934	1935	1936	1937
Syphilis	293	304	354	380	293	344
Soft Chancre...	106	136	128	131	115	135
Gonorrhœa	884	918	1,019	968	987	1,112
Non-Venereal Cases...	440	586	698	780	840	986
	1,673	1,944	2,199	2,259	2,235	2,577

An analysis of the number of newly diagnosed cases of venereal disease met with at the clinic gives the following result :—

	Percentage of total cases of diagnosed Venereal disease.					
Syphilis	17·6%
Soft chanere	8·6%
Gonorrhœa	73·8%

The considerable proportion of soft chanere is noteworthy. This disease is mainly an imported one, otherwise these figures correspond to those for the country generally.

CITY OF LIVERPOOL.

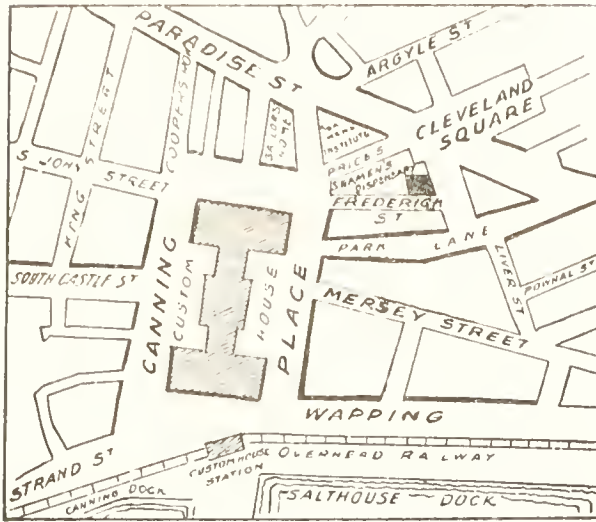
VENEREAL DISEASES. Chart shewing number of New Cases from 1918 to 1937.



1. 1984-1985



SEAMEN'S DISPENSARY. CLEVELAND SQUARE.



Venereal Diseases.—Time Table of Treatment Centres.

Monday :	Seamen's Dispensary	9.30 a.m. to 1 p.m. .. and 3 to 8 p.m.	Thursday	Seamen's Dispensary	9.30 a.m. to 1 p.m. and 3 to 8 p.m.
	Royal Infirmary	10 a.m. to 1 p.m. and 5.30 to 6.30 p.m.		Royal Infirmary	5 to 6 p.m.
	Mill Road Infirmary...	10 a.m. to 1 p.m. and 6 to 8 p.m.		Mill Road Infirmary...	10 a.m. to 1 p.m. and 6 to 8 p.m.
Tuesday :	Seamen's Dispensary	9.30 a.m. to 1 p.m. and 3 to 8 p.m.	Friday :	Seamen's Dispensary	9.30 a.m. to 1 p.m. and 3 to 8 p.m.
	Royal Infirmary	10 a.m. to 1 p.m.		Royal Infirmary	10 a.m. to 1 p.m. and 7 to 8 p.m.
	Mill Road Infirmary...	10 a.m. to 1 p.m. and 6 to 8 p.m.		Mill Road Infirmary...	10 a.m. to 1 p.m. and 6 to 8 p.m.
Wednesday :	Seamen's Dispensary	9.30 a.m. to 1 p.m. and 3 to 8 p.m.	Saturday :	Seamen's Dispensary	9.30 a.m. to 1 p.m.
	Royal Infirmary	10 a.m. to 1 p.m. and 5.30 to 6.30 p.m.		Royal Infirmary	By arrangement.
	Mill Road Infirmary...	10 a.m. to 1 p.m. and 6 to 8 p.m.		Mill Road Infirmary...	10 a.m. to 1 p.m.

Clinics in Other Merseyside Areas.

Birkenhead General Hospital ...Monday, Wednesday and Friday... 5.30 p.m.

Bootle General Hospital ...Monday 5.0 p.m.
Tuesday, Wednesday and Friday 6.0 p.m.

Wallasey, Mill Lane Hospital ...Wednesday... .. 7.30 to 8.30 p.m.

MEASURES AGAINST RODENTS.

Measures against Rodents.

The importance of rats as the agents which convey plague is well known, and requires no emphasis. It is, therefore, of the utmost value that the rat population both in ships and on the dock estate should be reduced to a minimum, and the following pages detail the measures which are adopted for this purpose, and also for the detection of plague amongst rats.

(a) All vessels trading with foreign countries have since 1928 been required under Article 28 of the International Convention of Paris to be provided with a certificate, not more than 6 months old, either of deratisation by an approved process, or of exemption after a thorough inspection which has revealed no evidence of rats;

(b) All vessels arriving from abroad are examined soon after arrival and during the discharge of cargo by trained rat-searchers. These men not only examine for evidence of rat infestation, but also search for dead rats, which are forwarded to the City Bacteriologist. This practice has been carried out in Liverpool since 1912, and has resulted in the discovery of a number of epizootics of rat plague on shipboard, which would probably otherwise have been overlooked;

(c) A trained staff of rat-catchers has been employed since 1901 who catch rats in incoming vessels, especially those from plague-infected ports, and also upon the docks and warehouses, etc. A large proportion of the rats and mice so caught—61·1 per cent. in 1937—is sent to the City Bacteriologist for examination for plague. None were found to be infected.

(d) Rat-proofing of ships. During the routine inspection of ships for certificates, or otherwise, harbourage for rats which is capable of elimination is often found. Representations are then made to the owners or agents and such harbourage is either eliminated or the certificate endorsed;

(e) Rat-proofing of docks. Under the Rats and Mice (Destruction) Act, 1919, it is an offence to permit any premises to act as a breeding ground for rats. The Liverpool docks are of solid construction and generally speaking present a minimum of rat

harbourage. Certain places, such as engineer's stores, accessory structures of a temporary or semi permanent character, etc., are liable to harbour rats. As a result of long-continued action such premises have been made ratproof, and by constant supervision are so maintained;

(f) In order to prevent rats passing to and from vessels, rat-guards are placed on the ropes between the ships and the quays.

As the result of these measures it may be affirmed that the risk of the introduction of rat plague has now been very greatly reduced.

International Sanitary Convention of Paris, 1926.

Article 28.

During the year, 153 fumigations were carried out for the purpose of obtaining Deratisation Certificates, and in addition 496 vessels were granted Deratisation Exemption Certificates, making a total of 649 examinations of vessels under Article 28. The table facing page 62 shows the number of rats which have been obtained after fumigation of vessels trading between Liverpool and the various ports of the world. This table covers the years 1933-1937.

Deratisation of Ships.

In order to bring the requirements of Article 19 of the Port Sanitary Regulations to the notice of shipowners, masters, and shipping agents, the following circular has been issued.

Liverpool Port Health Authority.

Tel No. 831.

Central 723.

PORT HEALTH OFFICES,

PRINCES PIER HEAD,

LIVERPOOL, 3.

Telegraphic Address:

Portelth, Liverpool.

Port Sanitary Regulations, 1933.

Deratisation of Ships.

INFORMATION FOR SHIPOWNERS, MASTERS, AND SHIPPING AGENTS.

(1) Under Article 19 of the Port Sanitary Regulations, 1933, made by the Minister of Health which implements in this country Article 28 of the International Sanitary Convention of Paris, 1926, the medical officer of health of an "approved" port is required, on arrival of a ship from a foreign port not possessing a valid

deratisation or deratisation exemption certificate, to ascertain whether the ship is so maintained that the number of rats on board is kept down to a minimum. If after inspection the medical officer of health is satisfied that such is the case he must issue a Deratisation Exemption Certificate. Otherwise he must require the ship to be deratised in such manner as may be completed and approved by him, and after deratisation has been completed to his satisfaction he must issue a deratisation certificate. In addition, the owner or master of a ship may apply to the medical officer of health, for a certificate, whereupon the latter must satisfy himself in the manner previously described as to the condition of the ship as regards rats, and issue either one or the other of the certificates referred to. The owner or master of the ship must pay to the Port Health Authority such fee for inspection and the issue of a certificate as the Minister of Health may from time to time determine. By "valid certificate" is meant a certificate that has been issued at an "approved" port either at home or abroad within the preceding six months.

(2) The Minister of Health has approved the Port of Liverpool for the purposes of Article 19 of the Port Sanitary Regulations, 1933, and the certificates may be issued on application to the Medical Officer of Health, Port Health Offices, Princes Pier Head, Liverpool, Tel. No. Central 831.

Application for the examination of a vessel for either form of certificate must be made on a prescribed form (obtainable at the Port Health Offices) and returned correctly filled in at least 24 hours before the time of inspection. The particulars required on this form include (*a*) the name of the vessel, (*b*) nationality, (*c*) the type of certificate required, (*d*) the dock where the vessel is lying, (*e*) when the holds will be empty, (*f*) the foreign port from which the vessel has come, (*g*) when it is expected to sail, and (*h*) the cubic capacities in cubic feet (grain not bale), of all the compartments of the vessel.

When application is made for a deratisation certificate, the name of the firm which will carry out the fumigation, and the process proposed to be employed, must also be given.

(3) The Liverpool Port Health Authority does not carry out the fumigation of vessels but supervises the operation in order to ensure that the regulations have been carried out: the ship owner or agent places the contract with a firm which must be approved by the Authority. A list of approved firms will be supplied on request.

The following essentials must be strictly adhered to:—

- (a) All parts of the vessel must be fumigated simultaneously when the ship is empty: no exception to this can be entertained without the permission of the Medical Officer of Health.
- (b) The vessel must be properly prepared. All ventilators must be securely covered, hatches well-fitting and covered with tarpaulins, and the necessary appliances for battening down supplied. Doors and openings must be properly sealed.
- (c) Rat harbourage, such as dunnage, bilges, and wooden pipe-casing, must be so arranged and opened up as to permit the penetration of the fumigant. When hydrogen cyanide is used all internal doors must be hooked open, cupboards opened, drawers pulled out and external doors closed but not locked.
- (d) Foodstuffs other than tinned goods must be removed from the storeroom prior to fumigation.
- (e) All water jugs and water bottles must be emptied prior to fumigation.
- (f) All bilges must be empty of water.
- (g) When fumigation of lifeboats is necessary the tank casing should be partly uncovered and each boat covered with a good tarpaulin.

(4) A certificate of deratisation will not be granted unless the following standards are strictly applied:—

Sulphur Dioxide.—When the gas is generated by burning sulphur, 3 lbs. of sulphur per 1,000 cubic feet of air space with a minimum exposure of eight hours. Sulphur of good quality to be used and distributed in open containers or buckets of not more than 9 lbs. If liquefied sulphur dioxide is used, 2 lbs. of liquefied gas will be necessary for each lb. of sulphur.

Hydrogen Cyanide.—When the gas is generated by the vapourisation of liquid hydrogen cyanide a minimum of 2 ozs. per 1,000 cubic feet of air space for holds, and 1 oz. per 1,000 cubic feet of air space for superstructures is required. If Zyklon B. is used, 50 grammes per 1,000 cubic feet is necessary. The minimum time of exposure is two hours.

Salforkose.—A minimum of 1 lb. 2 oz. per 1,000 cubic feet is required. Minimum exposure three hours.

(5) An officer of the Port Health Authority will attend at all fumigations in order to ensure that the process has been so carried out that a certificate may be issued.

(6) When hydrogen cyanide is used, the contractor should obtain a signed statement from the officer in charge of the vessel that all officers, crew, and dock workers have vacated the vessel. After the vessel is clear of fumigant, the contractor must give a certificate that the vessel is free of gas and safe for the return of the crew. The Liverpool Port Health Authority cannot accept responsibility for any accident or damage which may occur in the process of fumigation.

(7) A deratisation exemption certificate can only be granted after the whole vessel has been thoroughly examined by an officer of the Port Health Authority. The examination will take at least two hours, and arrangements should be made to give every assistance to the examining officer, especially in the opening up of compartments requiring inspection.

(8) The fee payable to the Port Health Authority for each certificate issued is in accordance with the following scale approved of by the Minister of Health:—

Number of Rats and Mice recovered from Vessels employed in the various Trade Routes, together with the number of Vessels examined and exempted or fumigated.

TRADE.	1933							1934							1935							1936							1937							
	Number of Ships.			Rats and Mice found after fumigation.		Average number per ship.		Number of Ships.			Rats and Mice found after fumigation.		Average number per ship.		Number of Ships.			Rats and Mice found after fumigation.		Average number per ship.		Number of Ships.			Rats and Mice found after fumigation.		Average number per ship.		Number of Ships.			Rats and Mice found after fumigation.		Average number per ship.		
	Examined.	Exempted.	Fumigated.	Rats.	Mice.	Rats.	Mice.	Examined.	Exempted.	Fumigated.	Rats.	Mice.	Rats.	Mice.	Examined.	Exempted.	Fumigated.	Rats.	Mice.	Rats.	Mice.	Examined.	Exempted.	Fumigated.	Rats.	Mice.	Rats.	Mice.	Examined.	Exempted.	Fumigated.	Rats.	Mice.	Rats.	Mice.	
RIVER PLATE.....	60	39	21	114	90	1.90	1.50	68	39	29	352	18	5.17	0.26	62	35	27	232	2	3.74	0.03	62	41	21	232	7	3.74	0.11	42	32	10	48	23	1.14	0.55	
W.C.S. AMERICA (Chili and Peru)	9	4	5	—	—	—	—	12	3	9	—	—	—	—	13	8	5	—	1	—	0.07	11	4	7	1	18	0.09	1.63	19	9	10	20	—	1.05	—	
ARGENTINE.....	2	1	1	5	—	2.50	—	3	2	1	—	—	—	—	6	2	4	83	1	13.83	0.16	11	7	4	23	—	2.09	—	19	15	4	18	—	0.95	—	
BRASIS.....	12	7	5	73	—	6.08	—	22	15	7	83	61	3.77	2.77	27	23	4	36	33	1.33	1.22	18	15	3	73	—	4.05	—	15	11	4	35	—	2.33	—	
NORTH AMERICA.....	23	18	5	55	61	2.39	2.65	25	14	11	11	—	0.44	—	17	10	7	5	—	0.29	—	23	13	10	30	16	1.30	0.69	33	23	10	1	53	0.03	1.61	
MEXICO.....	7	4	3	—	—	—	—	9	8	1	—	—	—	—	8	6	2	7	2	0.87	0.25	5	4	1	—	—	—	—	3	3	—	—	—	—	—	
INDIA.....	32	28	4	33	27	1.03	0.84	39	33	6	73	86	1.87	2.20	23	18	5	19	9	0.82	0.39	37	26	11	136	114	3.67	3.08	45	33	12	88	40	1.96	0.89	
MEDITERRANEAN.....	52	45	7	27	22	0.51	0.42	51	39	12	71	20	1.39	0.39	44	34	10	62	15	1.40	0.34	26	24	2	—	7	—	0.26	36	29	7	30	—	0.83	—	
ALEXANDRIA.....	13	6	7	105	5	8.07	0.38	9	5	4	3	—	0.33	—	13	10	3	26	6	2.00	0.46	19	15	4	34	12	1.79	0.63	13	12	1	22	—	1.69	—	
SPAIN.....	9	8	1	—	11	—	1.22	5	4	1	35	—	7.00	—	5	5	—	—	—	—	—	11	9	2	21	9	1.90	0.81	16	14	2	27	—	1.69	—	
PORTUGAL.....	8	8	—	—	—	—	—	2	2	—	—	—	—	—	5	4	1	—	—	—	—	3	3	—	—	—	—	—	5	4	1	1	—	0.20	—	
GREECE.....	10	6	4	36	29	3.60	2.90	7	5	2	9	3	1.28	0.42	9	7	2	4	17	0.44	1.88	9	8	1	7	—	0.77	—	9	8	1	—	18	—	2.00	—
CHINA AND JAPAN.....	22	18	4	2	—	0.09	—	28	24	4	13	12	0.46	0.42	24	21	3	5	8	0.20	0.33	17	15	2	41	—	2.41	—	27	23	4	50	1	1.85	0.04	
WEST INDIES.....	38	26	12	44	—	1.15	—	35	22	13	66	—	1.88	—	35	21	14	44	8	1.25	0.22	40	24	16	91	4	2.27	0.10	43	28	15	63	—	1.47	—	
EAST INDIES.....	—	—	—	—	—	—	—	4	4	—	—	—	—	—	2	2	—	—	—	—	—	11	6	5	2	—	0.18	—	6	4	2	—	—	—	—	
JAVA.....	10	5	5	41	—	4.10	—	8	7	1	—	—	—	—	7	5	2	3	—	0.42	—	7	4	3	2	—	0.28	—	14	14	—	—	—	—	—	
MADAGASCAR.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
MAURITIUS.....	3	2	1	—	32	—	10.66	1	—	1	8	—	8.00	—	1	1	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—
FJI ISLANDS.....	2	2	—	—	—	—	—	2	1	1	—	—	—	—	2	1	1	—	—	—	—	3	2	1	—	—	—	—	—	3	3	—	—	—	—	—
AUSTRALIA.....	59	41	18	113	45	1.91	0.78	69	49	20	77	27	1.11	0.39	75	44	31	49	18	0.65	0.24	81	53	28	53	18	0.65	0.22	74	48	26	40	2	0.54	0.03	
CANADA.....	37	25	12	102	1	2.75	—	31	21	10	88	—	2.83	—	44	27	17	168	7	3.81	0.15	33	22	11	81	2	2.45	0.06	35	26	9	23	—	0.66	—	
NEW ZEALAND.....	1	1	—	—	—	—	—	2	1	1	7	—	3.50	—	1	1	—	—	—	—	—	1	—	1	6	—	6.00	—	3	3	—	—	—	—	—	
W. C. AFRICA.....	43	26	17	379	1	8.81	—	53	37	16	283	11	5.33	0.20	45	25	20	356	1	7.91	0.02	45	34	11	119	—	2.64	—	55	31	24	719	1	13.07	0.02	
EAST AFRICA.....	7	6	1	—	—	—	—	6	5	1	3	—	—	—	5	3	2	58	—	11.60	—	4	4	—	—	—	—	—	5	4	1	12	—	2.40	—	
SOUTH AFRICA.....	9	9	—	—	—	—	—	4	4	—	—	—	—	—	15	8	7	12	1	0.80	0.06	13	11	2	5	—	0.38	—	20	18	2	12	—	0.60	—	
NORTH AFRICA.....	3	3	—	—	—	—	—	4	4	—	—	—	—	—	—	—	—	—	—	—	—	5	4	1	—	10	—	2.00	6	6	—	—	—	—	—	
CANARY ISLANDS.....	10	10	—	—	—	—	—	9	9	—	—	—	—	—	11	9	2	9	—	0.81	—	12	11	1	10	—	0.83	—	9	9	—	—	—	—	—	
PERSIAN GULF.....	3	3	—	—	—	—	—	1	1	—	—	—	—	—	5	5	—	—	—	—	—	11	11	—	—	—	—	—	13	13	—	—	—	—	—	
SOUTH GEORGIA.....	5	5	—	—	—	—	—	3	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
BLACK SEA.....	3	3	—	—	—	—	—	2	1	1	—	—	—	—	4	3																				

					£	s.	d.
Vessels up to	300 tons	...	...	...	0	10	6
.. from	301 tons up to 1,000 tons	...	...	...	1	1	0
.. ..	1,001 ..	3,000 ..	...	...	2	2	0
.. ..	3,001 ..	10,000 ..	...	...	3	3	0
.. over	10,000 tons	...	...	...	4	1	0

W. M. FRAZER,
Medical Officer of Health.

LIVERPOOL PORT HEALTH AUTHORITY.

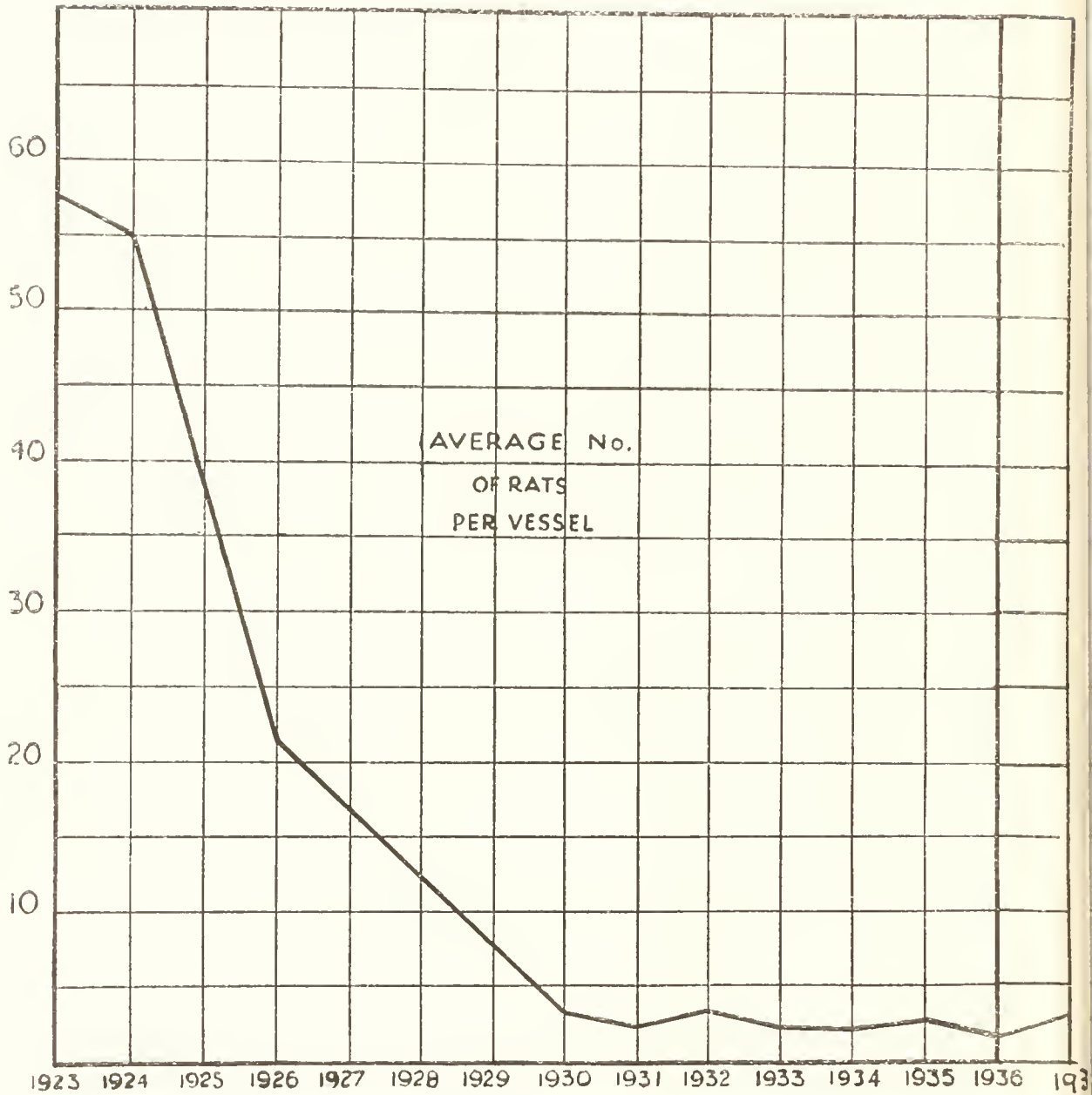
27th August, 1936.

The following table shows the number of fumigations of vessels during the past fifteen years and the number of exemptions for 1928-1937, together with the number of rats and mice discovered after fumigation during the same period and the average number of rats and mice per vessel:—

Year.	Number of Fumigations.	Number of Exemptions.	Total Number of Rats found after Fumigations.	Total Number of Mice found after Fumigations.	Average Number of Rats per Vessel.	Average Number of Mice per Vessel.
1923	90	—	5,295	57	58·83	0·63
1924	132	—	7,388	300	55·96	2·27
1925	119	—	4,817	257	40·47	2·15
1926	156	—	3,433	111	22·00	0·71
1927	119	—	1,967	130	16·52	1·09
1928*	130	11	1,804	190	12·79	1·34
1929	221	114	2,614	292	7·80	0·87
1930	187	316	1,762	75	3·50	0·14
1931	162	314	966	182	2·02	0·38
1932	142	347	1,434	428	2·93	0·87
1933	137	416	1,137	324	2·05	0·58
1934	154	419	1,183	238	2·06	0·41
1935	172	390	1,178	135	2·09	0·24
1936	153	421	1,005	220	1·75	0·38
1937	153	496	1,488	138	2·29	0·21

* In 1928 the first International Certificate was issued—on the 5th October. During that year 25 Deratisation and 11 Exemption Certificates were issued.

Graph illustrating the decline in the average number of rats per vessel examined at Liverpool during the past 15 years:—



Measures of Rat Destruction on Plague—"Infected" or "Suspected" Vessels or Vessels from Plague-Infected Ports during the Year 1937.

Total Vessels Arriving.	No. Fumigated with SO ₂ .	No. of Rodents Killed.	No. Fumigated with HCN.	No. of Rodents Killed.	No. Fumigated with both HCN & SO ₂ .	No. of Rodents Killed.	No. Fumigated with Salforkose.	No. of Rodents Killed.	No. of such vessels on which Trapping was employed.	No. of Rodents Killed.	No. of such vessels on which measures of Rat Destruction were not carried out.
*800	12	212 Rats 16 Mice	32	583 Rats 42 Mice	Nil	Nil	2	50 Rats 1 Mouse	641	686 Rats 55 Mice	41

* Including 116 vessels bound for Manchester.

Deratisation Certificates and Deratisation Exemption Certificates issued during the Year 1937.

Net Tonnage.	No. of Ships.	Number of Deratisation Certificates issued after Fumigation with			After Trapping, Poisoning, etc.	Total.	No. of Deratisation Exemption Certificates issued.	Total Certificates issued.
		H.C.N.	Sulphur.	H.C.N. and Sulphur.				
Up to 300 Tons ...	7	—	—	—	Nil	—	7	7
From 301 to 1,000 Tons ...	65	5	1	—	Nil	6	59	65
From 1,001 to 3,000 Tons ...	192	24	15	—	Nil	39	153	192
From 3,001 to 10,000 Tons ...	363	71	24	—	Nil	97	266	363
Over 10,000 Tons ...	22	11	—	—	Nil	11	11	22
TOTALS ...	649	111	40	Nil	Nil	153	496	649

Table showing the number of rats and mice obtained on ships and quays by the Authority's rat-catchers during the years 1928-1937.

Year.	NUMBER OBTAINED.			NUMBER.			
	From Ships.		Total.	EXAMINED.		DESTROYED.	
				From Ships.	From Quays.	From Ships.	From Quays.
1928	7,351	2,414	9,765	4,145	1,918	3,206	496
1929	7,036	1,456	8,492	3,408	1,271	3,628	185
1930	3,847	2,046	5,893	1,841	1,731	2,006	315
1931	3,190	1,969	5,159	1,669	1,688	1,521	281
1932	3,743	2,268	6,011	1,457	1,961	2,286	307
1933	2,820	2,454	5,274	1,165	2,158	1,655	296
1934	3,043	2,976	6,019	1,253	2,464	1,790	512
1935	2,514	3,938	6,452	978	3,229	1,536	709
1936	2,417	3,770	6,187	999	3,259	1,418	511
1937	2,847	3,200	*6,047	877	2,820	1,970	380
Total ...	38,808	26,491	65,299	17,792	22,499	21,016	3,992
							25,008

* 459 mice are included in these figures.

Number and species of rats caught, in the City and Port of Liverpool, during the year 1937.

1937	Warehouses.		Sewers.		Other Places.		Total (City).		Ships.		Quays.		Other Sources.		Total (Port).	
	Black.	Brown.	Black.	Brown.	Black.	Brown.	Black.	Brown.	Black.	Brown.	Black.	Brown.	Black.	Brown.	Black.	Brown.
January ...	8	25	...	809	8	208	16	1,042	120	1	144	7	51	9	315	17
February ...	1	1	...	707	3	367	4	1,075	229	11	84	6	42	6	355	23
March ...	4	26	...	759	16	389	20	1,174	211	...	125	11	34	12	370	23
April ...	27	26	...	799	18	419	45	1,244	205	2	138	25	65	14	408	41
May ...	12	21	...	704	13	309	25	1,034	218	5	121	14	75	51	414	70
June ...	16	15	...	906	22	471	38	1,392	343	...	195	16	73	32	611	48
July ...	1	13	...	908	13	418	14	1,339	105	1	119	8	57	24	281	33
August ...	11	7	...	766	26	352	37	1,125	85	...	128	6	50	18	263	24
September ...	17	63	...	986	22	402	39	1,451	286	...	159	22	82	25	527	47
October ...	24	25	...	954	52	344	76	1,323	132	...	190	32	89	32	411	64
November ...	11	43	...	1,023	23	417	34	1,483	250	...	136	35	110	50	496	85
December ...	16	60	...	839	25	262	41	1,161	433	...	111	19	76	23	620	42
TOTAL ...	148	325	...	10,160	241	4,358	389	14,843	2,617	20	1,650	201	804	296	5,071	517

Number and species of rats examined or destroyed in the City and Port of Liverpool during the year 1937.

1937.		Examined (City).		Destroyed (City).		Examined (Port).		Destroyed (Port).		Total Caught.		
		Black.	Brown.	Black.	Brown.	Black.	Brown.	Black.	Brown.	City and Port.		
January	5	229	11	813	204	13	111	4	1,390
February	1	231	3	844	203	22	152	1	1,457
March	13	249	7	925	204	23	166	...	1,587
April	10	268	35	976	317	40	91	1	1,738
May	5	219	20	815	238	48	176	22	1,543
June	11	290	27	1,102	281	48	330	...	2,089
July	5	270	9	1,069	190	28	91	5	1,667
August	9	248	28	877	197	23	66	1	1,449
September	10	311	29	1,140	283	47	244	...	2,064
October	20	280	56	1,043	299	64	112	...	1,874
November	16	329	18	1,154	263	83	233	2	2,098
December	15	263	26	898	265	41	355	1	1,864
TOTAL		120	3,187	269	11,656	2,944	480	2,127	37	20,820

Rats destroyed during 1937.

(1) In vessels :—

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Black ...	120	229	211	205	218	343	105	85	286	132	250	433	2,617
Brown ...	1	11	—	2	5	—	1	—	—	—	—	—	20
Species not recorded ...	—	—	—	—	—	—	—	—	—	—	—	—	—
Rats examined	71	89	83	132	67	61	42	33	58	67	38	99	840
Rats found infected with Plague	—	—	—	—	—	—	—	—	—	—	—	—	—

(2) In Docks, Quays, Wharves and Warehouses :—

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Black ...	195	126	159	203	196	268	176	178	241	279	246	187	2,454
Brown ...	16	12	23	39	65	48	32	24	47	64	85	42	497
Species not recorded ...	—	—	—	—	—	—	—	—	—	—	—	—	—
Rats examined ...	146	136	144	225	219	268	176	187	272	296	308	207	2,584
Rats found infected with Plague	—	—	—	—	—	—	—	—	—	—	—	—	—

Number of Mice destroyed on vessels ... 210

“ “ “ “ quays ... 249

“ “ “ examined on vessels and quays ... 273

The combined returns of all rats and mice caught and destroyed by shipping firms employing their own rat-catchers, by rat catching companies, and by the Public Health Authority, during the year 1937 are as follows :—

	Rats:	Mice.	Rats.	Mice.
PORT—				
In vessels	8,113	210		
On quays	2,951	249		
			11,064	459
CITY—				
In warehouses	473	5		
In sewers and from other sources ...	14,759	286		
			15,232	291
		TOTAL ...	26,296	750

Number of Visits to **Vessels** by Rat Catchers 6,086

Do. do. do. Rat Searchers 4,808

Do. do. **Quays, Sheds, etc.,** by Inspectors ... 3,592

Do. do. do. do. Rat Searchers 2,380

Do. do. do. do. Rat Catchers 13,083

Measures against Rodents.

Steps taken for detection of rodent plague.

Liverpool trades extensively with many ports where plague is always present. All vessels arriving from such ports are boarded, and careful enquiry is made as to any evidence of the existence of plague among the rats on board. Medical inspection alone is not sufficient, as rodent plague may exist on board without having given rise to any human cases, and without any sick or dead rats having been seen. Consequently, as soon as the vessel berths, it is necessary—

- (1) to catch samples of the rat population in all parts of the vessel ;
- (2) to examine the vessel in all parts, and at various times during the discharge of cargo, for sick or dead rats.

All rats so obtained are sent to the City Bacteriologist for examination for plague infection.

Samples of the rat population from the dock quays, sheds and warehouses are obtained daily, and all rats so caught are submitted to the City Bacteriologist for examination. The success of plague preventive measures depends entirely on the detection of the infection at the earliest possible moment, followed by the adoption of energetic measures to destroy every infected rat. Rodent plague when once established is most difficult to eradicate, and in addition to the possibility of causing human cases, it leads to the imposition of restrictions on our ships in foreign ports. In order that this work may be carried out efficiently the Port Health Authority employs a staff of eleven full-time rat-catchers and rat-searchers.

Measures taken to prevent the passage of rats between ship and shore.

All vessels with the exception of coastwise vessels must have rat-guards affixed to their moorings during their stay in the port.

A rat-guard to be effective should be placed at the ship end of the mooring and as far as possible away from the ship's side.

When vessels loaded with cargo are infected with either human or rodent plague the following procedure is adopted in order to prevent the passage of rats from the ship to the shore:—

If the vessel is loaded a preliminary fumigation may be undertaken to destroy the rats, the nature of the cargo would, however, determine whether this procedure should be followed. The measures enumerated below are enforced pending discharge of cargo, when a complete and thorough deratisation takes place by fumigation with hydrocyanic acid gas.

- (a) The vessel is breasted off six feet from the quayside.
- (b) Rat-guards are adjusted on all moorings.
- (c) One gangway only is allowed, and a watchman is stationed there day and night.
- (d) The gangway must be lifted at sunset and not lowered until sunrise.
- (e) The cargo must be discharged under supervision of the Port Health staff.
- (f) Trapping and examination of rats caught in the neighbouring sheds are carried on.

Methods of Deratisation of Ships.

Deratisation of ships is carried out by fumigation with either sulphur dioxide, or hydrocyanic acid gas. Fumigations in the Port of Liverpool are carried out, as a rule, by private firms under the supervision of the Port Health Authority. At least twenty-four hours notice in writing must be given to the Port Health Authority before the commencement of any fumigation. This notice must be on the official form, which sets out the cubic capacities of the spaces and the fumigant to be used.

Deratisation of premises in the vicinity of docks or quays.

This is carried out by the setting of traps, the laying down of poisoned baits and occasionally by fumigation with hydrogen cyanide.

Rat Proofing.

WHARVES AND WAREHOUSES.—With the exception of a few of the old docks in the central district, the wharves on the dock estate are of rat-proof construction, made with ferro-concrete and stone.

The roadways and pavings of the sheds are setts on a concrete foundation.

The sheds are built of brick and reinforced concrete. All sheds in the new Gladstone Dock are constructed solely of reinforced concrete, and there are no ledges, beams or angle iron on which rats may run.

All offices and wooden huts in the sheds are made rat proof either by being lifted 18 inches clear of the ground or sheathed with iron or cemented round the base.

New offices or other buildings are either built on brick or concrete piers clear of the ground, or the base is built hard and close to the paving of the shed.

It is the duty of the port health inspectors to see that all stores are kept clean and tidy, and that no rubbish is allowed to accumulate. Old rope, dunnage, wood, etc., must be stacked neatly on platforms raised 18 inches from the ground, and the space beneath the platform must be kept clean and free from rubbish.

RAT-PROOFING IN SHIPS.—In the course of their routine examinations of vessels the port health inspectors bring to the notice of the responsible officials any particular part which in their opinion is in need of rat-proofing. In order to make a vessel rat-proof there must be no place where rats may remain undisturbed and make their nests, and also no available food nor water supply. It should also be impossible for rats to travel freely from one part of a vessel to another. In order to accomplish this, skeleton casings are adopted for pipes in place of the older type of box casing; expanded metal is fitted round pipes, telephone wires, electric wires, etc., at a point where they pass through bulkheads or from one compartment to another, or at openings necessary for light and ventilation. There is a steady increase in the number of vessels which have been rendered rat-proof.

HYGIENE OF CREWS' SPACES.

The Hygiene of Crews' Spaces.

During the year careful attention has been paid to the inspection of crews' spaces by the port health inspectors. All vessels entering the port are visited as soon as possible after docking, and enquiries are made concerning the health of the crew, the occurrence of any sickness during the voyage, the source of the water supply, the condition of all tanks and bilges, the condition of storerooms, and whether any sick or dead rats have been found.

After making these enquiries the port health inspector accompanied by the ship's officer, visits the crew's quarters, and their condition is noted, particular attention being paid to cleanliness, structural defects, rat harbourages, accumulations of rubbish, etc. The attention of the officer is called to any defects that are found, and a request made that they should be remedied. These instructions are generally carried out by the shipping company concerned without any difficulty. The inspector re-visits the vessel from time to time, and notes when the defects have been made good.

Conditions in which seamen live have been the subject matter of many conferences and articles. As a result of recent papers and discussions the Board of Trade have issued a new set of instructions to surveyors, which apply to all new vessels. They demand a higher standard for crews' quarters but some considerable time will elapse before the full effect is shown.

The requirements for water supply to wash-houses in the above-mentioned instructions seem to leave a loop-hole for evasion. Paragraph 19 states "An adequate supply of hot and cold fresh water must at all times be readily available for washing purposes. Where fresh water is not laid to wash-basins, supplies are to be made available from convenient sources." The term "convenient" is elastic and not specific enough. An adequate and pure water supply aboard ship is a hygienic necessity, although conditions naturally limit the amount of water which can be carried.

There does not appear to be any generally accepted formula used by naval architects to estimate the water storage of a ship. Assuming that such factors are known as

1. Number of crew and passengers carried,
2. Maximum number of days between ports,
3. Consumption per head per diem.

Brook suggests $\frac{C \times V}{F \sqrt{V}}$

when

C = maximum complement of passengers and crew, and

V = maximum number of days between ports.

F is a factor depending on the type of ship.

The ships principally affected are ocean-going cargo vessels of from 1,500 to 4,000 net tons. A distillation plant, where an approved one is installed, may reduce storage by fifty per cent., but distilled water is little used, and for potable purposes unpopular.

Fresh water is usually stored in double-bottomed tanks fore or aft, or in deep tanks amidships. These are filled at appointed ports from hydrants and scoured at the end of a voyage, or when empty. The capacity and location of deep tanks vary from ship to ship. The conditions of storage call for no especial comment.

CONSUMPTION, DISTRIBUTION AND USE OF WATER.

Personal consumption in this investigation varied from two to over thirty gallons per day. If the vessels examined were divided into three types, viz. :—

- (a) those without hot or cold water inside wash-houses,
- (b) those with cold water inside,
- (c) those with hot and cold water inside,

the increased consumption of the second group over the first is slight, but there is admittedly a sharp rise in the last group.

For hygienic purposes a continuous supply is to be preferred to an intermittent one. Frequently the supply of water is available but not convenient. It is exceptional to find taps for fresh cold water on wash-basins; more often water is carried by bucket from a tap placed away from the basins. Should hot water be required an expedition to the galley is necessitated. Men tired, and dirty after duty, in such circumstances are prone to dispense with ablutions; in any case carriage involves unnecessary labour and loss of water, particularly with heavy pitching and rolling of a vessel.

The ideal to be arrived at is a plentiful supply of hot and cold fresh water with spring automatic taps to each basin and shower bath. Salt water would suffice for long baths. There are recently-built vessels where taps are absent from the wash-houses, hot and cold water being carried from amidships. One form of shower bath provided was a good example of antiquated methods. The shower bath was erected in a corner of the wash-house; a rubber hose was fitted to the pipe at one end and immersed in a bucket of water at the other. Hot water was carried from amidships, the shower being controlled by a hand pump. No scuppers were provided, and the bather had to clean up the soiled deck after the bath. This construction in a vessel built in 1936 shows a lack of ingenuity on the part of the builders.

It has been averred that an ocean-going cargo vessel cannot carry enough water to meet the demand arising from the supply of hot and cold fresh water to wash-houses. This question was investigated by the Port Health Authority during the past year. Inspectors were directed to enquire regarding:

1. Total capacity of water carried.
2. Total consumption per diem.
3. Maximum number of days between ports
4. Method of distribution.

An investigation was made of 58 vessels, the great majority being cargo vessels of from 1,500 to 4,000 net tons. The average daily consumption divided by the total number of passengers and crew gave

approximately the consumption per head per diem for all purposes (drinking, washing, laundry, cleaning, waste). The provision of hot and cold fresh water inside would increase daily consumption, but this could largely be met by the large storage reserve. Full use is not at present made of either storage capacity or distillation plants. Some owners at present provide the facilities outlined, and there is no reason why their example should not be followed by others.

The type of crew aboard affects the consumption of water. The aquatic habits of the lascar continually baptizing himself from a bucket with a condensed milk tin is familiar enough. Native seamen are usually supplied from separate tanks in the forecabin; their pumps are locked, and supplies issued daily. Some degree of restriction would here seem expedient to minimise waste. Correlated with the use of water is the discipline of the crew, but the provision of improved crews' quarters and the installation of a modern method of distribution of fresh water should attract a better personnel, thereby raising the standard of marine hygiene.

Vermin in Crews' Quarters.

Bug infestation of crews' quarters is a difficult problem, but one which should not be beyond solution. Bugs are introduced into vessels by man, and the number of crews' quarters found to be infested is much too high; the unfortunate attitude adopted towards bug infestation seems to be that the condition is inevitable, and that nothing much can be done. This view can only be described as deplorable, remembering that only ten years ago the same outlook with regard to rat infestation was prevalent. In the last decade rats have been entirely eradicated from a large number of vessels; during 1937, 649 vessels were examined at Liverpool for evidence of rat infestation, and of these 496, or 76·8 per cent. showed no evidence of rats; the average number of dead rats found after fumigation in each of the remaining 153 vessels was 9·72. This shows a marked contrast to the conditions of vessels prior to the International Sanitary Convention of Paris, 1926, and there seems to be no reason why similar improvement should not be obtained with bug infestation.

Strong disciplinary measures and constant propaganda on the necessity for personal cleanliness should be carried out. Various methods have been used in order to eradicate bug infestation, including the stripping of woodwork, re-painting, the use of the blow-lamp, and fumigation with hydrocyanic acid gas, but little has been done to prevent it. Large sums of money are spent annually by shipowners in disinfesting crews' quarters, and unfortunately a large proportion of this expenditure is wasted, due to the fact that reliance is placed on a single fumigation with hydrocyanic acid gas. Although experiments have shown that this gas will kill both bugs and bug eggs, it is impossible to guarantee that some of the latter will not escape, owing to the inaccessibility of the places where they are deposited, in which event there will be a further infestation when these eggs hatch out. The ideal procedure to obtain a thorough disinfestation would be fumigation on two occasions with an interval of 10 to 14 days between each. By this means any bugs which hatched out from eggs which escaped the first fumigation would be killed off. An increasing number of shipping companies are adopting this advice when time and circumstances permit.

The importance of stripping woodwork, the use of the blow-lamp, washing down, and repainting, should not be overlooked as valuable adjuncts to fumigation. Once bugs are introduced into crews' quarters the difficulty of eradicating them is intensified by such structures as hollow tubular bunks—especially those with cup and stem fittings—cracks in woodwork, defective bulkheads, and tongue-and-groove boarding, all of which are potential harbours. The necessity for eliminating these contributory factors is being urged constantly, and ship owners are advised to have all hollow tubes filled in and painted, defective woodwork and bulkheads repaired, and plywood substituted for tongue-and-groove boarding.

Until it is fully realised that it is less difficult to keep bugs out of crews' quarters than to kill the insects once introduced, so long will the present unsatisfactory and unhygienic state of affairs continue.

Inspection of Shipping.

Year 1937.

Nationality.							Visits.	Re-visits.	Total.
British	...	...	...	...	...	...	4,130	950	5,080
Norwegian	...	...	...	...	...	...	295	20	315
Danish	...	...	...	...	...	...	209	23	232
American	...	...	...	...	...	...	144	10	154
Swedish	...	...	...	...	...	...	134	11	145
Dutch	...	...	...	...	...	...	125	8	133
Greek	...	...	...	...	...	...	87	31	118
Finnish	...	...	...	...	...	...	70	12	82
Russian	...	...	...	...	...	...	59	8	67
German	...	...	...	...	...	...	48	5	53
Latvian	...	...	...	...	...	...	28	10	38
French	...	...	...	...	...	...	28	1	29
Yugoslavian	...	...	...	...	...	...	22	4	26
Italian	...	...	...	...	...	...	19	6	25
Japanese	...	...	...	...	...	...	21	—	21
Esthonian	...	...	...	...	...	...	19	1	20
Spanish	...	...	...	...	...	...	6	6	12
Rumanian	...	...	...	...	...	...	6	3	9
Egyptian	...	...	...	...	...	...	7	1	8
Hungarian	...	...	...	...	...	...	4	1	5
Lithuanian	...	...	...	...	...	...	4	—	4
Brazilian	...	...	...	...	...	...	1	3	4
Panama	...	...	...	...	...	...	3	—	3
Belgian	...	...	...	...	...	...	3	—	3
Bulgarian	...	...	...	...	...	...	2	—	2
Danzig	...	...	...	...	...	...	2	—	2
Argentine	...	...	...	...	...	...	1	1	2
Portuguese	...	...	...	...	...	...	1	—	1
Polish	...	...	...	...	...	...	1	—	1
TOTAL							5,479	1,115	6,594

Summary of Insanitary Conditions during the year 1937.

Class of Vessels.	Number Inspected.	Number on which Nuisances were found.	Per cent.
SAILING FOREIGN—			
Steamers	4,114	579	14·07
Motor	718	61	8·49
Sailing	4	—	—
Total	4,836	640	13·23
SAILING COASTWISE—			
Steamers	521	36	6·91
Motor	118	2	1·69
Sailing	4	—	—
Total	643	38	5·91

Nationality.	Number Inspected.	Number on which Nuisances were found.
British	4,130	605
Foreign	1,349	73
Total	5,479	678

Nuisances arising through

Defects of Original Construction. (a)	Per cent. of Total Defects.	Structural Defects through wear and tear. (b)	Per cent. of Total Defects.	Dirt, and other conditions prejudicial to health. (c)	Per cent. of Total Defects.
10	0·36	317	11·35	2,466	88·29

The following Table shows the number and Nationalities of the Vessels on which Defects were detected during the year 1937.

NATIONALITY.	Number of Ships.	Dirty Forecables.	Vermineous Quarters.	Dirty Wash-houses, Store-rooms, etc.	Foul Water Casks and Tanks.	Foul Bilges.	Foul W.C.'s.	Accumulations of offensive refuse.	Gear stowed in Crew's Quarters.	Damp Quarters.	Water lodging on top of Forepeak Tank.	Animals kept, causing nuisance.	Leaky Decks overhead.	Defective Stoves.	Defective Bulkheads.	Defective Ports and Sky-lights.	Defective Ventilators.	Defective Flooring Boards.	Defective Hatches and Lockers.	Defective Chain Pipes.	Defective Hawse Pipes.	Defective W.C. Fittings.	Defective Soil Pipes.	Inadequate Ventilation.	Inadequate Lighting.	Inadequate Drainage.	Bare Iron not Sheathed.	W.C.'s deficient in Ventilation and situation bad.	Total number of Defects.	Total Remedied.
British...	605	1,320	949	25	1	...	25	...	10	20	3	...	50	33	4	60	5	6	8	2	5	51	9	6	...	...	...	1	2,593	2,446
Greek...	27	12	9	...	...	...	...	...	...	...	2	...	8	5	11	20	...	...	7	...	...	5	...	...	...	1	...	...	80	73
Norwegian...	12	14	15	2	...	...	2	...	...	...	...	...	2	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	39	37
Danish...	4	...	6	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	8	8
Dutch...	4	...	...	...	...	...	...	...	...	...	...	...	3	...	1	2	...	...	...	...	1	...	2	...	...	...	...	...	9	5
Finnish...	4	...	10	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12	12
Russian...	3	...	6	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	8	8
Yugo-Slavian...	3	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	6	6
Egyptian...	3	1	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	5	3
Spanish...	2	1	...	...	...	...	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	4
Italian...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3
Swedish...	2	...	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	16
Brazilian...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
Hungarian...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
Latvian...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
French...	1	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2
Rumanian...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
Portuguese...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
Estonian...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...
Totals...	678	1,352	1,015	29	1	...	33	...	10	21	5	...	66	43	18	85	5	6	15	2	7	60	10	8	...	1	...	1	2,793	2,627

Canal Boats.

The Port Health inspectors have been appointed inspectors under the Canal Boats Acts, 1877 and 1884. An inspector devotes one day each week to the inspection of canal boats plying in the river or docks, and during the year, 646 boats were inspected, of which 26 were found to have some condition contravening the regulations.

ALIENS' INSPECTION AND
MIGRATION.

Medical Inspection of Aliens.

The following table gives the total number of aliens arriving in the Port of Liverpool during 1937, and the number of each of the categories under which alien passengers are classified by the Immigration Department of the Home Office :—

Total aliens.	Transmigrants.	Residents returning.	In transit.
10,193	1,127	118	2,251
Visitors of 6 months or less.		Diplomats and persons on Foreign Govt. Missions.	Seamen.
On holiday, Tourists, etc.	On Business.		
5,858	239	60	94
Seamen under Contract to join ships in British Waters.		Ministry of Labour Permits.	Other Aliens.
154		48	244

The medical inspection and examination of aliens is carried out by the assistant port medical officers. The objects of the inspection are to ascertain whether any of the alien passengers are :—

(1) suffering from any disease likely to be a danger to the public health of this country ;

(2) suffering from any disease or deformity likely to cause such aliens or their dependents to become a public charge.

No alien is allowed to take up employment in this country without a special permit from the Ministry of Labour, so that it is rare for the medical inspector to have to consider the earning capacity of an alien. The procedure with regard to the medical inspection and examination of aliens entering the Port of Liverpool is as follows :—

The medical officer boards the vessel immediately on arrival with the view of obtaining information as to the health of all persons on board

from the ship's surgeon, and also of making a rapid preliminary inspection of all classes of immigrants. This latter may be completed before the immigration officers start their examination, or may occur simultaneously with it, depending upon the circumstances. Note is made of any alien who in the opinion of the medical officer should require a more detailed examination, irrespective of the time that the alien may wish to remain in the country.

The medical officer attends during the examination made by the immigration officers, when a further opportunity is afforded to inspect the aliens more closely. All aliens who wish to stay in this country more than three months are referred to the medical inspector for examination.

During the year 1937, a medical certificate was issued in respect of one alien of unsound mind.

Transmigrants.

All second and third-class passengers bound for the United States, whether from the Continent or British Isles, are inspected by an Officer of the U.S. Public Health Service immediately before sailing, and if any are found to be in a verminous condition they are sent to the city disinfecting station, where suitable accommodation is available for the destruction of vermin in the clothing and belongings of each person. The cost of the disinfection is defrayed by the shipping company concerned.

Emigration.

The number of passengers (emigrants and others) leaving the Port of Liverpool during the year 1937 was 58,334 compared with the previous year, when the number was 58,233. The following return shows the number during the last ten years:—

Year			Year		
1928	...	116,083	1933	...	62,452
1929	...	113,116	1934	...	58,380
1930	...	91,493	1935	...	52,469
1931	...	53,858	1936	...	58,233
1932	...	58,819	1937	...	58,334

*The following Tables relating to Emigration and Immigration
have been kindly supplied by the Board of Trade.*

Statement showing the number of passengers (*emigrants* and others), distinguishing British subjects and aliens, who left the port of Liverpool for places out of Europe in the year 1937:—

DESTINATION.	British Subjects.	Aliens.	Total.
British North America ...	13,726	3,353	17,079
Australia and New Zealand ...	771	17	788
British South Africa ...	1,020	132	1,152
India (including Ceylon)...	4,794	128	4,922
Other parts of the British Empire ...	7,979	313	8,292
Total British Empire ...	28,290	3,943	32,233
United States ...	4,549	7,204	11,753
Foreign South America ...	1,549	484	2,033
Other Foreign Countries	1,112	286	1,398
Total Foreign Countries...	7,210	7,974	15,184
Pleasure Cruises (to places out of Europe) ...	10,847	70	10,917
Grand Total ...	46,347	11,987	58,334

Number of passengers (*emigrants* and others), distinguishing British subjects and aliens, who left the port of Liverpool in each month of the year 1937:—

MONTH.	British Subjects.	Aliens.	Total.
January	2,610	369	2,979
February	2,290	369	2,659
March	2,576	527	3,103
April	2,165	539	2,704
May	2,996	415	3,411
June	4,098	651	4,749
July	6,317	1,634	7,951
August	6,410	3,257	9,667
September	8,228	2,261	10,489
October	4,667	1,145	5,812
November	2,460	478	2,938
December	1,530	342	1,872
Total	46,347	11,987	58,334

Statement showing the number of passengers (*immigrants* and others), distinguishing British subjects and aliens, who arrived at the port of Liverpool from places out of Europe in the year 1937:—

Countries in which the Passengers embarked.	British Subjects.	Aliens.	Total.
British North America	14,147	2,168	16,315
Australia and New Zealand	395	10	405
British South Africa	506	12	518
India (including Ceylon)	2,103	85	2,188
Other parts of the British Empire	2,821	144	2,965
Total British Empire ...	19,972	2,419	22,391
United States	5,127	5,816	10,943
Foreign South America	1,278	330	1,608
Other Foreign Countries	733	107	840
Total Foreign Countries ...	7,138	6,253	13,391
Pleasure Cruises (from places out of Europe)	12,064	61	12,125
GRAND TOTAL	39,174	8,733	47,907

Number of passengers (*immigrants* and others), distinguishing British subjects and aliens, who arrived at the port of Liverpool from places out of Europe in each month of the year 1937:—

MONTH.					British Subjects.	Aliens.	Total.
January	...	...	...	...	981	147	1,128
February	...	...	...	...	882	192	1,074
March	...	...	...	...	1,815	252	2,067
April	...	...	...	...	4,760	482	5,242
May	...	...	...	...	4,550	1,286	5,845
June	...	...	...	...	4,141	1,730	5,871
July	...	...	...	...	5,490	2,460	7,950
August	...	...	...	...	5,242	880	6,122
September	...	...	...	...	5,145	384	5,529
October	...	...	...	...	3,030	325	3,355
November	...	...	...	...	1,677	329	2,006
December	...	...	...	...	1,452	266	1,718
TOTAL					39,174	8,733	47,907

Emigrant Inspections.

Owing to the restrictions imposed by the United States of America, emigration from European countries to America has virtually ceased; in consequence of this, the attendance of the port health inspector at the Board of Trade clearances has been withdrawn.

The crews and steerage passengers of all vessels cleared under Part III of the Merchant Shipping Act, 1894, were subjected to inspection by medical officers of the Board of Trade.

FOOD INSPECTION.

Supervision of Food Importations, 1937.

The inspection of imported foods has had careful attention throughout the year. This work is carried out in the docks of Liverpool, Bootle, Birkenhead, and the outlying districts of Garston and Bromborough, which all come within the jurisdiction of the Liverpool Port Health Authority.

The inspection of foods is carried out, either after the goods are landed on the dock quays or during the process of discharge overside. In almost every case foods landed within the Port of Liverpool are completely supervised by the port food inspectors and only a very small quantity requiring further examination is passed on to other public health authorities.

The procedure adopted in the first instance is one of sampling, and the percentage examined varies according to the circumstances of landing and the type and condition of the foodstuffs. A certain percentage of each consignment landed is inspected on the quayside, and if none is found to be unsound the whole consignment is released at once. If, however, any part of the consignment be found to be diseased, part diseased, or unsound, and the consignment is too large to be dealt with on the quayside, arrangements are made with the importer for it to be transferred to suitable premises. In the case of frozen meats the consignment is transferred to a local cold store and subsequently dealt with there.

Canned goods, dried box goods, oranges, apples, etc., are usually transferred under guarantee to a local warehouse, but there has been an increasing tendency to sort fruit and other foodstuffs on the quay. In either case the sound goods are removed from the unsound and the former released for sale. Unsaleable foodstuffs are allowed to go for industrial purposes, but great care is always taken that these foods are not marketed for human consumption, and only well-known and reliable firms, approved by the medical officer of health, are allowed to receive them for the purpose of manufacturing animal foods, dog biscuits, melting down for tallow, fat extraction, etc.

Meat Importation.

CASEOUS LYMPHADENITIS.

Throughout the year a preliminary examination of at least five per cent. of carcasses was conducted to find caseous lymphadenitis. In certain consignments, examination of a similar proportion resulted in the rejection of over 2 per cent. A second batch was then investigated. In this manner up to one half of some consignments were examined. Where the percentages rejected fell below two, the carcasses were released.

The lesions in caseous lymphadenitis are most frequently found in the prescapular glands. Greater care exercised at the time of slaughter would reduce the number of animals rejected and expedite the release of consignments. Incision of the glands in their smallest cross-sectional area is liable to leave tracts of disease undetected. Occasionally there are two sets of prescapular glands in sheep, only one being diseased. Multiple incisions should be made which are designed to expose a maximum area. The removal of glands in dressing carcasses is objectionable, both increasing the number rejected, and increasing the number of examinations. In the case of sheep, however, unless there is evidence of gross and deliberate removal of glands, carcasses are released.

Two hundred and twenty-eight of a total of 4,650 carcasses of frozen wethers from Argentine had caseous lymphadenitis and/or glands removed; four per cent. of ewes from New Zealand were rejected for similar reasons. A consignment of Falkland Islands sheep were found to be stale, but free from disease.

4.9 and 1.5 per cent. respectively of cut mutton and lambs from Argentine were excluded. Some cuts had been reconditioned, others contaminated with abdominal contents. Similar contamination was noted in bags of frozen sheep and lamb tongues.

Mould and superficial decomposition showed in some consignments. In September, the s.s. "Marquesa" landed frozen meats damaged with brine from a leakage in the refrigerating plant. This led to the rejection of quantities of quarters of beef, and in addition pork cuts, offal and poultry.

Some consignments of frozen crops of beef were reconditioned, due to the growth of moulds; hindquarters of frozen beef from other ships were rejected for bone taint. Recent imports of boneless beef from New Zealand were folded and frozen with their serous membranes inside. These goods were detained at cold stores and a percentage defrosted. The attention of the representative of the New Zealand Government has been drawn to this faulty method of packing. Shipments of frozen meat from Australia and New Zealand carried in oil-burning ships had part of their cargoes tainted by oil fumes. Treatment at cold stores was continued until the meats were free from the presence of oil.

Ten crates of frozen livers (in tins) from Uruguay, were destroyed. Inspection proved them to be from the pig, although designated "Lambs' Livers"; they were mouldy and uncertificated.

PIGS' PLUCKS.

As a result of complaints regarding the unwholesome condition of pigs' plucks imported from Northern Ireland, a Veterinary Inspector visited Liverpool in July and August to witness the early morning arrival of Irish produce. He accompanied the Chief Food Inspector in his routine work. After the visit the commodity arrived in a much healthier condition and the improvement was maintained throughout the last four months of the year.

Irish Free State consignments landed in good order.

Microscopic examination of pigs from Australia, New Zealand and Argentine showed no evidence of trichinosis.

BORACISED HAMS AND BACON.

This product (from United States of America and Argentine) arrived in increasing amounts under bond for re-exportation or use as ships' stores.

Canned Foods.

CANNED FISH.

Sardines from France, Portugal and Spain were examined for metallic contamination. Some consignments from Spain and one from Portugal contained lead and tin, and were detained pending exportation.

CANNED MEAT.

Over 40 per cent. of two consignments of Brazilian canned meats were rejected, the principal defect being tins which had burst and been damaged in transit.

Varying amounts (from 2·7 to 21 per cent.) of tins of canned jellied veal from Denmark arrived with tins blown; the highest figure was reached in summer months.

CANNED FRUITS.

Samples of Japanese canned mandarines were sweat-damaged; full examination of cases was made and all burst tins eliminated.

There was a considerable reduction in the quantity of Spanish canned goods imported. Consignments of apricot pulp and tomato puree showed a high number of burst tins.

Due to faulty processing, cans of Italian tomatoes were frequently leaking; other cans had been repaired, and many were vented and heavily soldered. In one cargo, 45 cases repaired, of a total of 800 cases, were returned to the packers. All others were surrendered or destroyed.

Lard.

One hundred and fifty tierces of lard from United States of America were damaged in a ship's hold; sufficient to fill 62 tierces was salvaged in a dirty condition, and utilised for industrial purposes under guarantee.

Inedible Fats and Oils.

32,086 packages of fats and 18 barrels of lard oil were dealt with during the year; 31,275 were imported from Australia and New Zealand, the remainder from Newfoundland, North and South America, Holland, Germany and Japan.

Sugar.

Records are kept, and due supervision exercised, over all loose collected and dirty sugar. It is released to approved establishments for refining.

Grain and Cereals.

Increased quantities of wheat landed were damaged by sea water. The cereals were utilised for animal food under guarantee.

Fruit.

Previous reports recorded an improvement in the grading, packing and transport of green fruits. This has been maintained, and although large quantities were sorted, the relative amount of unsound fruit was small. Australian apples and pears were better in quality, grading and packing. Fifty-seven per cent. of one small parcel of Australian pears, however, were decomposed.

Fair quantities of Jaffa grapefruit were sorted, and the amount of Jaffa oranges both landed and sorted exceeded any previous record. The s.s. "Star" at Haifa and Tel Aviv landed cargoes in which over 40 per cent. of the fruit was affected due to rough weather, insufficient ventilation, and climatic conditions abroad.

In some cases both sound and unsound fruit was present which indicated probable decomposition before shipment.

Although late seasonal consignments of navel and pera oranges had to be sorted the waste was not excessive.

Two shipments of Almerian grapes were partly decomposed: a consignment of 4,250 packages in the s.s. "Gartavon" had to be destroyed; one quarter of another, of 18,000 barrels of grapes, were similarly treated.

Quantities of Canary Island bananas and tomatoes were unsound: cargoes from the deck were in better condition than those from the hold.

In August, melons arrived from French Morocco which proved to be unsound, and 587 packages were destroyed.

In conclusion, there has been a general increase in the amount of foodstuffs rejected, which can be accounted for by the concomitant rise in the volume of imports and to some extent by damage inflicted by fires and sea-water.

Table showing the numbers of cattle, sheep and pigs exported from Ireland to Liverpool during the year 1937, and showing the ports in Ireland at which the animals were shipped:—

	Cattle.	Sheep.	Pigs.
Ballina	294	6,331	192
Belfast	28,402	38,412	1,695
Cork	21,454	1,640	1,474
Drogheda	12,926	22,616	20
Dublin	155,557	124,497	615
Dundalk	766	6,628	150
Galway	428	4,840	3
Londonderry	280	4,333	13
Limerick	2,284	—	—
Newry	3,610	1,139	1
Rosslare	9,023	10,606	—
Sligo	—	—	—
Waterford... ..	10,765	2,812	18
Westport	58	144	—
Wexford	—	—	—
Total	245,847	224,028	7,181

Table showing the total numbers of the several kinds of cattle, sheep and pigs exported from Ireland to Liverpool during the year 1937.

Cattle.	No.	Sheep.	No.
Fat	84,829	Fat	88,073
Stores (for fattening)	151,261	Stores	1,275
Milch Cows	7,168	Lambs	134,680
Springers	2,005		
Calves	584	Total	<u>224,028</u>
Total	<u>245,847</u>	Pigs.	
		Fat	6,864
		Stores	317
		Total	<u>7,181</u>

Statement showing the number of live cattle, etc., landed and slaughtered at the Foreign Animals Wharf (Birkenhead, Alfred and Wallasey Lairages) during the years 1927 to 1937, inclusive:—

Year.	LANDED.			SLAUGHTERED.		
	Oxen and Calves.	Pigs.	Sheep, Lambs and Goats.	Oxen and Calves.	Pigs.	Sheep, Lambs and Goats.
1927	199,172	61,713	379,736	62,323	1,657	164,985
	4,074	—	—	3,712	—	—
	351	413	4,635	43	—	332
1928	249,003	47,224	365,820	73,245	2,256	144,441
	444	—	—	170	—	—
	280	362	2,630	33	3	561
1929	238,185	48,882	325,224	67,423	1,103	122,929
	693	—	—	693	—	—
	266	416	2,789	62	2	714
1930	262,564	65,417	310,862	53,967	1,437	99,902
	1,260	—	—	1,241	—	—
	517	234	4,703	160	—	1,050
1931	256,024	87,025	372,688	43,564	3,309	147,660
	20,521	—	—	13,510	—	—
	452	197	2,589	98	4	465
1932	242,672	44,490	328,522	40,814	2,747	110,591
	12,259	—	—	3,289	—	—
	832	310	33,891	158	1	548
1933	221,060	10,516	225,078	38,804	897	69,838
	34,220	—	—	18,241	—	—
	413	164	2,085	47	1	57
1934	176,274	19,646	257,328	27,608	957	51,835
	30,195	—	—	17,826	—	—
	217	154	795	12	1	3
1935	271,650	23,734	213,689	39,478	1,146	61,430
	4,500	—	—	2,889	—	—
	269	256	1,581	9	2	9
1936	239,016	14,035	290,484	28,559	1,331	81,792
	22,310	—	—	13,841	—	—
	216	125	800	10	1	73
1937	246,220	7,135	224,170	30,042	222	61,603
	859	—	—	7	—	—
	26	34	885	—	—	55

Heavy type represents Irish.

‡ Foreign.

† Isle of Man.

Table showing the quantity of unsound meats utilised under supervision during the years 1925 to 1937:—

Year.	Beef.				Mutton.				Pork.			
	Tons.	cwts.	qrs.	lbs.	Tons.	cwts.	qrs.	lbs.	Tons.	cwts.	qrs.	lbs.
1925	1,184	15	1	5	7	10	1	1	—	4	1	15
1926	336	0	2	2	4	6	1	1	—	7	2	26
1927	68	8	1	4	161	10	1	19	9	2	0	14
1928	28	2	0	8	46	3	3	5	2	11	3	0
1929	32	18	1	18	178	13	0	21	2	19	0	4
1930	20	8	3	25	58	1	0	2	—	12	1	9
1931	32	6	3	6	45	19	0	26	—	2	0	27
1932	8	4	3	1	28	12	3	15	—	11	2	5
1933	15	2	0	5	9	9	1	25	—	2	2	19
1934	11	15	1	14	8	8	0	10	—	10	0	2
1935	14	13	2	23	18	1	3	8	4	9	1	1
1936	13	17	0	3	11	13	1	2	6	12	2	17
1937	18	0	3	5	26	13	0	21	0	6	1	11

Table showing the quantity of unsound offal utilised under supervision during the years 1925 to 1937:—

Year.	Beef.	Mutton.	Pork.	Veal.
1925	40,160 pieces.	10,129 pieces.	1,883 pieces.	541 pieces.
1926	13,889 „	31,217 „	1,566 „	209 „
1927	9,243 „	6,725 „	2,790 „	248 „
1928	4,034 „	52,312 „	778 „	39 „
1929	6,447 „	14,422 „	814 „	9 „
1930	5,268 „	24,206 „	332 „	2 „
1931	4,068 „	4,491 „	2,081 „	8 „
1932	5,737 „	28,668 „	531 „	1,845 „
1933	9,256 „	1,541 „	2,221 „	408 „
1934	10,798 „	3,165 „	1,542 „	7 „
1935	2,247 „	10,647 „	6,017 „	—
1936	2,065 „	11,794 „	5,401 „	1 piece.
1937	1,546 „	73,530 „	3,734 „	—

Table showing the quantity and description of unsound meats utilised under supervision* during the year 1937:—

DESCRIPTION.	TOTAL WEIGHT.	CAUSE OF DESTRUCTION.					
		Tuberculous.		Brine stained, mouldy and decomposed.		Other causes.	
		Tons	cwts. qrs. lbs.	Tons	cwts. qrs. lbs.	Tons	cwts. qrs. lbs.
Beef	18 — 3 5	—	— 1 9	15 6 —	7	2 14 1	17
Mutton	26 13 — 21	—	— — —	9 13 3	13	16 19 1	8
Pork	— 6 1 11	—	— — —	— 6 1	11	— — —	—
Veal	— 6 2 15	—	— — —	— 6 2	15	— — —	—
Total	45 6 3 24	—	— 1 9	25 12 3	18	19 13 2	25

* These were destroyed or allowed to go for industrial purposes to the satisfaction of the Medical Officer.

Table showing the quantity and description of offal condemned during the year 1937:—

Name of Organ.	Beef.		Mutton.		Pork.		Veal.	
	Number.	Weight, Pounds.	Number.	Weight, Pounds.	Number.	Weight, Pounds.	Number.	Weight, Pounds.
Livers ...	148	1,859	11,605	16,274	887	2,588	6	16
Tongues ...	10	33	22,368	5,596	4	4	548	422
Hearts ...	29	82	5,400	1,381	89	73	—	—
Skirts ...	30	67	—	—	—	—	—	—
Kidneys ...	155	160	28,824	3,006	25	9	—	—
Tripe ...	252	3,204	—	—	—	—	—	—
Tails ...	842	1,373	—	—	—	—	—	—
Feet ...	80	390	2,909	1,670	76	70	—	—
Plucks ...	—	—	—	—	389	2,641	—	—
Brains ...	—	—	—	—	4	1	—	—
Sweetbreads ...	—	—	2,424	606	—	—	—	—
Lungs ...	—	—	—	—	2,020	5,769	—	—
Maws ...	—	—	—	—	240	392	—	—
Totals ...	1,546	7,168	73,530	28,533	3,734	11,547	554	438

The organs dealt with above were rejected for various reasons, notably, decomposition and diseased conditions, such as cysts, inflammation, etc.

Table showing quantities of unsound general foodstuffs utilised under supervision during the year 1937:—

Description.	No. of Tins.	Weight in Pounds.	Description.	No. of Tins.	Weight in Pounds.
Canned Goods—			Tomatoes	18,971	40,652
Apples	24	216	Tomato puree	862	9,482
Apricots	78	97	Whole Egg	1	22
Apricot Pulp	869	9,552	Beef	1,559	7,113
Bilberries	39	372	Tongues	67	236
Carrots	8	20	Mutton	2	12
Cherries	10	25	Jellied Veal	1,836	9,424
Fruit Salad	60	60	Veal and Ham	12	72
Grape Fruit	130	208	Hams	100	1,664
„ „ Juice	28	230	Pork Fillets	488	2,928
Loganberries	1	2	Chicken	67	299
Mandarines	40,427	22,402	Crab	8,711	3,844
Peaches	125	157	Lobster	980	628
Pears	1,553	3,359	Salmon	2,619	1,415
Pineapples	11,868	18,392	Prawns	53	19
Plums	3	6	Pilchards	509	456
Raspberry Pulp	1	9	Evaporated Milk	459	435

Description.	Packages.	Weight.			
		Tons.	Cwts.	Qrs.	Lbs.
Fruit (Fresh)—					
Apples	137	3	1	—	18
,, (loose)	—	—	—	1	22
Bananas	6,995	190	11	2	13
,, (loose)	—	187	8	3	18

Description.	Packages.	Weight.			
		Tons.	Cwts.	Qrs.	Lbs.
Fruit (Fresh)—continued—					
Oranges	210,278	7,635	3	—	19
„ (loose)	—	73	14	1	20
Plums	290	2	12	—	9
Pears	404	8	7	—	12
Grape fruit	6,040	215	11	2	18
Lemons	2,656	102	16	—	8
„ (loose)	—	2	2	3	18
Grapes... ..	8,426	132	12	1	12
Melons... ..	1,032	23	4	3	19
Tomatoes	12,095	150	11	1	3
Coconuts	8	—	8	2	8
Brazil nuts (loose)	—	59	4	2	1
Pineapples	22	—	15	1	8
Raisins	22	—	5	—	26
„ (loose)	—	—	11	3	20
Walnuts (loose)	—	—	5	3	19
Almonds	1	—	—	—	14
„ (loose)	—	—	1	1	14
Nut and Fruit Dessert	18	—	4	2	—
Ground nuts	424	34	5	—	12
„ (loose)	—	—	8	3	3
Vegetables—					
Carrots	50	—	8	—	4
Potatoes	646	36	5	2	1
„ (loose)	—	—	2	3	23
Turnips	225	11	5	—	—

Description.	Packages.	Weight.			
		Tons.	Cwts.	Qrs.	Lbs.
Vegetables—continued—					
Onions... ..	1,111	52	15	1	12
Kidney Beans	5	—	—	1	17
Cereals—					
Wheat	—	1,419	6	2	14
Maize	—	4,760	11	1	20
Rice	—	5	3	2	13
Tapioca	—	—	18	—	15
Flour	—	3	—	3	11
Barley	—	2	12	—	18
Butter Beans	—	—	13	2	10
Peas	—	2	10	—	—
Lentils... ..	—	—	—	2	24
General—					
Hams (single)	49	—	5	—	—
Rabbits (single)	60	—	1	1	20
Turkeys (single)	18	—	1	3	2
Chickens (single)	43	—	1	2	9
Lard	62	10	13	—	17
„ (loose)	—	—	2	—	—
Desiccated Coconut	23	1	6	2	22
Currants	1	—	—	1	22
„ (loose)	—	—	1	3	18
Tea (loose)	—	—	6	—	12
Spaghetti and Tomato (jars)	38	—	—	1	8

Table showing the total quantities of the different unsound foodstuffs utilised under supervision during the year 1937:—

	Tons.	Cwts.	Qrs.	Lbs.
Beef, Mutton, Pork and Veal	45	6	3	24
Offal (Beef, Mutton, etc.)	21	5	3	2
Canned Goods	59	14	2	24
Fruit and Vegetables	8,925	6	2	27
Cereals	6,194	17	0	13
General (Fish, Poultry, Rabbits, etc.)	13	0	1	18
TOTAL	15,259	11	2	24

The following tables give the particulars of samples sent to the City Analyst and City Bacteriologist for examination during the year 1937:—

SAMPLES SENT TO CITY ANALYST.					
Nature of Samples.				Country of Origin.	No. of Samples.
Canned Sardines	...	...	...	Portugal	30
"	"	...	...	Spain	4
"	"	...	...	France	2
" Peeled Shrimps	...	...	...	Norway	1
" Crab	...	...	...	Norway	2
" Anchovies	...	...	...	Spain	1
" Tangerines	...	...	...	Spain	2
" Tomato Purée	...	...	...	Italy	1
Lamb Livers in Tins	...	...	...	N. Zealand	2
Brine	...	...	...	Canada	2

SAMPLES SENT TO CITY ANALYST.				
Nature of Samples.			Country of Origin.	No. of Samples.
Strawberry Pulp	...	...	Canada ...	2
Blackcurrant Pulp	...	...	Czecho-Slovakia	2
Apples	...	...	Australia	1
Grape Fruit Peel	...	...	Spain ...	1
Vegetable Shortening	...	...	Canada ...	1
Rice	...	...	Japan ...	1

SAMPLES SENT TO CITY BACTERIOLOGIST.				
Nature of Sample.			Country of Origin.	No. of Samples.
Water	...	...	—	4
Condensed Milk	...	...	—	1
Canned Jellied Veal	...	...	Denmark	2
Canned Rabbit	...	...	N. Zealand	1
Finnan Haddock	...	...	—	1
Blood	...	...	—	36
Urine	...	...	—	8
Faeces	...	...	—	77

In addition, 382 samples of goat hair, buffalo hair, black drawn bristle hair and wool were submitted for examination.

The Port Health Authority is also engaged in the issue of certificates of disinfection for foreign governments and other purposes in connection with the exportation of hides, wool, jute sacks and cloth, tailors' cuttings, rags, second-hand bags and clothing, bales of cotton, etc. The number of such certificates issued during the year was 1,252.

The department also endorses under the United States, Canadian and other regulations, certificates regarding wholesomeness of food articles, and the sanitary condition of the premises in which the articles are produced or stored, comprising poultry, game, cheese, bacon, hams, potatoes, preserved fish, pickled beef, tongues, sausage skins, lime juice, etc.

The work attached to preparing and recording these certificates is considerable, and takes up a large amount of time of the department.

The Medical Officer to the Port Health Authority desires to express his appreciation of the valuable assistance received from H.M. Collector of Customs and staff, the Mersey Docks and Harbour Board and their officers, and the various shipping companies who have co operated with the Port Health Authority in the maintenance of Public Health and the prevention of disease in the port. The Consular Bodies have at all times given courteous assistance.

W. M. FRAZER,

Medical Officer of Health,

Port Health Authority.

MUNICIPAL ANNEXE,

LIVERPOOL, 2.

31st March, 1935.

